)

```
August 25, 2004, 01:54:26; Search time 2.78648 Seconds (without alignments) 912.596 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                       1586107
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                  1586107 segs, 282547505 residues
                                                                                                                                                                                 US-09-593-793A-113_COPY_367_375
48
1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                     OM protein - protein search, using sw model
                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A Geneseq 29Jan04:*

1: geneseqp1980s:*

2: geneseqp2000s:*

4: geneseqp2001s:*

5: geneseqp2001s:*

6: geneseqp2003s:*

7: geneseqp2003bs:*

8: geneseqp2003bs:*
                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                     Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database :
                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                              Run on:
```

to have a	score greater than or equal to the score of the result being printed,	tion.
chance	result	istribut
Pred. No. is the number of results predicted by chance to have a	score of the	and is derived by analysis of the total score distribution.
results	L to the	of the t
e number of	han or equal	by analysis
No. is th	e greater t	is derived
red	SCOL	pug

	SUMMAKIES	Description	AAM01228 Aam01228 P553S spl	AAU69873 Human pro	1764 Prosta	33	ABR54445 Abr54445 Prostate	126	Aay54369 Amino	Abr5458	8 Adb1447	AAE01423 Aae01423 Human sec	9 Aaw850	Aab2926		AAO19084 Human pro	m	ADB14479 Adb14479 Human P50	Abr54578	-	AAW69385 AAW69385 Prostate	AAW71869 Amino aci	AAY82002 Human imm		ABG94411 Human pro	AAM01117 Aam01117 Human pro	
		DB	4																								
		Length	123	123	123	123	123	123	231	246	246	252	255	255	255	255	305	305	355	355	553	553	553	553	553	553	
1	e/o	Query Match	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	ö	
Length 123 123 123 123 123 123 123 123 123 123		Score	ìω	α	ω	ω	ω	ω	α	ω	œ	œ	ω	æ	œ	ω	48	48	48	48	48	48	48	48	48	48	
Ouerry Match Length 8 100.0 123 100.0 123 100.0 123 100.0 123 100.0 123 100.0 123 100.0 123 100.0 123 100.0 123 100.0 123 100.0 103 103 100.0 103 100.0 103 100.0 103 100.0 103 100.0 103 100.0 103 100.0 103 100.0 103 100.0 103 100.0 103 100.0 103 100.0 103 100.0 103 100.0 103 100.0 10		Result No.		(7)	n	4	'n	v	7	8	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	

Aab74800 Prostate Aag99002 Human pro Aag61250 Human P50 Abu71653 Prostate Aau04961 Human BRO Aau10324 Human PRO Abb95222 Human PRO Abb95222 Human Dro Abg61900 Prostate Abg61900 Prostate Abg77665 Prostate Abb7775 Human mas Abr54334 Prostate Abb77575 Human pro Aam01318 Alpha pre Aam50661 Thioredox Aab74330 Prostate Abu77860 Prostate Abm67930 Human pro Aau699030 Human pro	NTS				. 9	fic, diagnosis, vaccine,							ker SL, Jiang Y, Reed SG; MW, Stolk JA, Skeiky YAW;		especific protein, for diagnosing, or in a patient and for use in		ion describes polymucleotide sequences (I) which encode proteins (II). (I) and (II) have cytostatic activity, vaccine production and gene therapy. (I), (II), (II), (II) are used treat cancer in a patient. (I) and or (II) are used treat cancer in a patient. (I) and squosed or treated is particularly prostate cancer. (I) each in vaccines. The antibodies or (I) can be used for gression of cancer in a patient. (I) and (II) can also diagnostic and therapeutic methods for prostate.
0000 0000 0000 0000 0000 0000 0000 0000 0000	ALIGNMENTS	AA.			5538-	speci sis.							Harlocker Retter MW,		prostate-s ate cancer	jlish.	polymum (I) an interior consequence true delibertrue true delibertrue delibert
AAB7486 AAG6211 AAU0196 AAU0101 AAU0103 AAU0103 AAU0103 AAU0103 AAU0104 AAU01104	Ā	123 A			acid P	state- etasta				4.			H, H		u ij	p, Engli	ribes po (II) (product, protein are use ed in the r treate, crines, of canc tic and
4 4 4 4 4 10 10 10 10 10 10 10 10 14 14 14 14 14		in;		<u>ک</u>		pros				157	367				ding a prosta	543pp;	scr ns ns ns on or or ost
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		protein;		st entry	ant amino	ancer; ;				001WO-US001	-0048	ζP.	Mitc GR, IJ;	45.	e encoding eating pros	-464; 5	invention descration for the program of the program
7.7.7.000000000000000000000000000000000		andard;		(fire	e vari	ate c gene		-A2.		, 2001	, 2000US	CORIXA CORP	illon DC, , Fanger Meagher M	25873/	leotide and tre	Page 463	invention decific protection bacction vacction (II). fusting (I) or (II) is are also is diagnosed in the progressimprove diagny can indications
\$\times \times \		28 st	228;	T-2001	splic	; prost	sapien	151633	TL-2001	N-2001	N-2000	-	ä₽,	2001-4	polynucleotid itoring and traines.	2	The present inverprostate-specificand can be used into prepared using (I the antibodies and carr that is diameter the improvement of the provement proving the provement of the provement proving the provement of the proving
00000000000000000044444460000000000000		RESULT 1 AAM01228 ID AAM012	AX AC AAM01	DT 04-OCT	DE P5538	KW Human KW cytosi	Omo	PN WOZOOL	FD 19-JUL	PF 16-JAN	PR 14-JAN	PA (CORI	AA Xu J, PI Kalos PI Wang A	DR WPI;	¥ C S	PS Claim	XX CC The process and CC and CC and CC and CC CC the and CC

Gaps

ò

DB 4; Length 123; 0; Indels

Matches

8.8366

RESULT 2 AAU69873

```
Prostate cancer, vaccine, gene therapy, cytostatic, fusion protein, immunogen, cancer, prostate specific antigen, PSA, prostatic acid phosphatase, PAP, prostate specific membrane antigen,
                                                      100.0%; Score 48; DB 4; 100.0%; Pred. No. 0.58;
                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                Prostate cancer associated protein #33.
                                                                                                                                                                                                                                  ABU71764 standard; protein; 123 AA.
                                                                                     ,0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-OCT-1999; 99US-0157455P.
04-OCT-2000; 2000US-00679272.
28-MAR-2001; 2001US-00822827.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-JUN-2001; 2001US-00895793.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HURAL J.
MCNEILL P D.
HOUGHTON R L.
Y DE BASSOLS C V.
                                                                                                                                                                                                                                                                                                10-JUN-2003 (first entry)
                                                                                      9, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LI S X.
WANG A.
SKEIKY Y A W.
HEPLER W T.
HENDERSON R A.
                                                                                                                                                    53
                                                                                                                       σı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       XU J.
DILLON D C.
MITCHAM J L.
HARLOCKER S I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KALOS M D.
FANGER G R.
RETTER M W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VEDVICK T S.
CARTER D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-245062/25.
                                                      Query Match
Best Local Similarity
                                                                                                                       1 GATCLSHSV
                                                                                                                                                  45 GATCLSHSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STOLK J A.
DAY C H.
                           Sequence 123 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US2002192763-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FOY T M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JIANG
                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19-DEC-2002
                                                                                                                                                                                                                                                                 ABU71764;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (XUJJ/)
(DILL/)
(MITC/)
(HARL/)
(JIAN/)
(KALO/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HOUG/)
(DBAS/)
(FOYT/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (RETT/)
(STOL/)
(DAYC/)
(VEDV/)
(CART/)
(LISX/)
(WANG/)
(KEPL/)
(HEPL/)
(HEND/)
(HEND/)
(MCNE/)
                                                                                        Matches
                                                                                                                                                                                                  RESULT 3
                                                                                                                                                                                                                     ABU71764
                                                                                                                                                                                                                                                   à
                                                                                                                                                  셤
                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to isolated prostate-specific polynucleotides, polypeptides, fusion proteins of the polypeptides, antibodies raised against the polypeptides (or antigenic ephthopse derived from them) and antigen-presenting cells expressing the polypeptides. The antibodies are useful for detecting the presence of cancer, especially prostate cancer. The polypeptides, polynucleotides and the antigen-presenting cells are useful for stimulating and/or expanding T cells specific for a tumour protein, and for inhibiting the development of cancer especially prostate cancer. Compositions comprising the polynucleotide and/or polypeptide are useful for stimulating an immune response, and for treating cancer. The oligonucleotide is useful for detecting cancer. The prostate specific polypeptide of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New human prostate-specific polypeptides and polynucleotides useful for the diagnosis and treatment of cancer, especially prostate cancer.
volume. AAH93357 to AAH93944 and AAM01115 to AAM01318 represent polynuclectide and amino acid sequences used in the exemplification of the present invention
                                                                                                                                                                                                                                                                                                                                                                                                             Human; prostate cancer; cytostatic; immunostimulant; tumour; immunogen.
                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kalos MD;
Carter D;
                                                                                                                                      ö
                                                                                                    100.0%; Score 48; DB 4; Length 123; 100.0%; Pred. No. 0.58; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Xu J, Dillon DC, Mitcham JL, Harlocker SL, Jiang Y, Fanger GR, Retter MW, Stolk JA, Day CH, Vedvick TS, Li SX, Wang A, Skeiky YAW, Hepler WT, Henderson RA;
                                                                                                                                                                                                                                                                                                                                                                              Human prostate cDNA encoded protein #67.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 2; Page 486-487; 579pp; English.
                                                                                                                                                                                                                                                                               AAU69873 standard; protein; 123 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27-MAR-2000, 2000US-00536857.
09-MAY-2000, 2000US-00568100.
12-MAY-2000, 2000US-00593793.
13-JUN-2000, 2000US-00593793.
27-JUN-2000, 2000US-00593793.
27-JUN-2000, 2000US-00636215.
29-AUG-2000, 2000US-00657279.
66-SEP-2000, 2000US-00657279.
10-OCT-2000, 2000US-00657676.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-MAR-2001; 2001WO-US009919
                                                                                                                                                                                                                                                                                                                                              30-JAN-2002 (first entry)
                                                                                                                                     Conservative
                                                                                                                                                                                                GATCLSHSV 53
                                                                                                                                                                  1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2001-639232/73.
N-PSDB; AAS64041.
                                                                                                                  Best Local Similarity
                                                                       Sequence 123 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200173032-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                     و
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-OCT-2001
                                                                                                                                                                                                                                                                                                               AAU69873;
                                                                                                                                                                                                  45
                                                                                                    Query Match
```

```
Prostate specific protein and its encoding polynucleotide, useful for the treatment and diagnosis of prostate cancer.
      Kalos MD;
Carter D;
Hural J;
Fanger GR, Retter MW, Stolk JA, Day CH, Vedvick TS, Li SX, Wang A, Skeiky YAW, Hepler WT, Henderson RA, Mcneill PD, Houghton RL, Y De BassolsCV, Foy TW;
                                                                                                                                                                                                                                                                                       Example 13; SEQ ID NO 706; 85pp; English.
```

```
The present invention provides prostate-specific coding sequences and their encoded proteins. These can be used in the diagnosis and treatment of cancers, particularly prostate cancer. The present sequence is a protein described in the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dillon DC, Mitcham JL, Harlocker SL, Jiang Y, Henderson RA; MD, Fanger GR, Retter MW, Stolk JA, Day CH, Vedvick TS; D, Li SX, Wang A, Skeiky YAW, Hepler WT, Hural J;
                                                                                                                                                                                                                                                                                                                                                                        New prostate-specific polynucleotides for diagnosing and treating diseases, in particular prostate cancer, and as markers for the progression of cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          therapy; prostate-specific protein; PSP; human; prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%; Score 48; DB 5; Length 123; 100.0%; Pred. No. 0.58; o; Indels ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                 billon DC, Mitcham JL, Harlocker SL, Jiang Y, RR, Retter MW, Stolk JA, Day CH, Vedvick TS, Wang A, Skeiky YAW, Hepler WT, Henderson RA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Prostate tumour specific protein sequence SEQ ID 706.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 2; SEQ ID NO 706; 87pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABR54445 standard; protein; 123 AA.
                                                                                                                                                                                                                                                           on DC, Mitcham JL,
Retter MW, Stolk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-MAY-2001; 2001US-00852911.
29-JUN-2001; 2001US-00895814.
10-DEC-2001; 2001US-00012896.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-MAY-2002; 2002WO-US014753.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9; Conservative
                            COL) KALOS M D.

74/) FANGER G R.

77/) STOLK G M.

1 DAY C H.

1 DAY C H.

1 CARTER D.

1 LI S X.

1 KANG A.

1 SKEIKY Y A W.

1 HEPLER M T.
                                                                                                                                                                                                                                HENDERSON R A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GATCLSHSV 9
HARLOCKER S
                                                                                                                                                                                                                                                                                                                                           WPI; 2002-255649/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45 GATCLSHSV
                                                                                                                                                                                                                                                                     Dillon DC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cytostatic; gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 immune response;
                   JIANG Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 123 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200289747-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-AUG-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-NOV-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Xu J, Dill
Kalos MD,
Carter D,
                                                                                                                                                                                                                                                                                        g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABR54445;
                                                 (FANG/)
(RETT/)
(STOL/)
(DAYC/)
(VEDV/)
                                                                                                                                                                                                               (HEPL/)
                                                                                                                                                          (LISX/)
(WANG/)
(SKEI/)
                                  (KALO/)
                                                                                                                                                                                                                                                                                        Fanger |
Li SX,
                                                                                                                                                                                                                                                                     Xu J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 5
ABR54445
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                             ö
             The invention describes a fusion protein comprising at least one amino acid sequence of immunogenic portions of any of the 3 sequences not defined in the specification, or sequences having at least 70 or 90 $ sequence identity to any one of the 35 sequences defined in the USPTO web site, which is encoded by any of the 4 modeotide sequences not defined in the specification. The fusion protein, composition and methods are useful as markers to indicate the prostate cancer. The proteins are useful as markers to indicate the presence or absence of cancer. This is the amino acid sequence of a prostate cancer therapy associated protein. Note: The sequence of a prostate cancer confirmed presence of the prince of th
                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cancer; prostate cancer; vaccine; cytostatic; immunostimulant;
                                                                                                                                                                                                                                                                                                                                             ·,
                                                                                                                                                                                                                                                                                                         4; Length 123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human P553S splice variant encoded protein SEQ ID NO 706.
                                                                                                                                                                                                                                                                                                                                           0; Indels
                                                                                                                                                                                                                                                                                                       100.0%; Score 48; DB 4;
100.0%; Pred. No. 0.58;
tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABB95333 standard; protein; 123 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-FEB-1997; 97US-000806099.

01-AUG-1997; 97US-00094804.

10-FEB-1998; 98US-0003065.

25-FEB-1998; 98US-0001565.

23-SEP-1998; 98US-0015453.

23-SEP-1998; 98US-0015812.

15-JAN-1999; 99US-0015812.

13-JUL-1999; 99US-00352616.

12-NOV-1999; 99US-00439313.

18-NOV-1999; 99US-00436867.

18-VAR-2000; 2000US-00548657.

27-MAR-2000; 2000US-00568100.

13-JUN-2000; 2000US-00568100.

13-JUN-2000; 2000US-00568100.

13-JUN-2000; 2000US-00568100.

13-JUN-2000; 2000US-00568100.

13-JUN-2000; 2000US-00568100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10-AUG-2000; 2000US-00636215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-AUG-2000; 2000US-00651236
06-SEP-2000; 2000US-00657279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12-JAN-2001; 2001US-00759143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-JUL-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                             9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                GATCLSHSV 53
                                                                                                                                                                                                                                                                                                                                                                             1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       XU J.
DILLON D C.
MITCHAM J L.
                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                     Sequence 123 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JS2002022248-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABB95333;
                                                                                                                                                                                                                                                                                                                                                                                                                  45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (XUJJ/)
(DILL/) I
(MITC/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABB95333
 X000000000000000X8
                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

ô

Gaps

.. 0

Kalos MD; Carter D;

ă

```
New isolated polypeptide for use in a vaccine for stimulating an in response, or for treating or diagnosis cancer, preferably prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAY54369 standard, protein; 231 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                   Example 13; Page; 101pp; English.
                10-OCT-2000; 2000US-00685166.

09-NOV-2000; 2000US-00709729.

12-JAN-2001; 2001US-0078669.

09-FEB-2001; 2001US-00786669.

09-MXY-2001; 2001US-00855911.

29-UUN-2001; 2001US-00855814.

10-DEC-2001; 2001US-00012896.

09-MAY-2002; 2002US-00144678.
  2000US-00679426
                                                                                                                                                                                                                                      Stolk JA, Kalos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ഗ
                                                                                                                                                                                                                                                                         WPI; 2003-756193/71.
N-PSDB; ADB14155.
                                                                                                                                                                                                  (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
es 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATCLSHSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                45 GATCLSHSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 123 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                      Xu J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAYS4369
ID AAYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 7
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                 The present invention relates to novel prostate-specific proteins (PSP) and their coding sequences. The PSPs and their coding sequences are useful for stimulating an immune response in a patient, or for treating prostate cancer in a patient and for determining, detecting or diagnosing the presence of a cancer in a patient. The present sequence was used to illustrate the invention
                                                                                            New prostate-specific proteins and genes, useful in gene therapy, particularly for stimulating an immune response in a patient, or treating prostate cancer in a patient, as well as for diagnosing prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human, prostate specific cDNA, cytostatic, immunostimulant, gene therapy, cell therapy, vaccine, T-cell epitope; class I major histocompatibility complex allele, MHC; prostate cancer; tumour; antigen presenting cell.
  Watanabe Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human prostate specific cDNA P553S splice variant #4 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                 DB 6; Length 123; 0.58;
  Foy TM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Indels
  Vinals Y De BassolsC,
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 100.0%; Score 48; DB Best Local Similarity 100.0%; Pred. No. 0.5 Matches 9; Conservative 0; Mismatches
                                                                                                                                                                                                  Example 13; Page 555; 691pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADB14156 standard; protein; 123 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-00159812.
99US-00232149.
99US-00288946.
99US-00352616.
99US-00439313.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97US-00904804.
98US-00020956.
98US-00030607.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000US-00568100.
2000US-00570737.
2000US-00593793.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-AUG-2000; 2000US-00636215.
29-AUG-2000; 2000US-00651236.
06-SEP-2000; 2000US-00657279.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-00115453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-00443686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12-NOV-2002; 2002US-00294025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-00483672
2000US-00536857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
  Houghton RL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCLSHSV 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GATCLSHSV 9
                                                          WPI; 2003-167130/16
                                                                                                                                                                                                                                                                                                                                                                              Sequence 123 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US2003185830-A1
                                                                                                                                                              in a patient.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-AUG-1997)
09-FEB-1998;
25-FEB-1998;
14-JUL-1998;
23-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-APR-1999;
13-JUL-1999;
12-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
Mcneill PD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           02-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADB14156;
                    Deng I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 6
ADB14156
ID ADB1426
XX
AXC ADB1
XX
BY
XX
HUME
XX
HUME
XX
KW Clai
KW C
  ð
```

```
The invention relates to an isolated polypeptide comprising no more than 11-542 amino acids of ADB1363 comprising a sequence ADB14647. The peptides comprise a fragment ADB1363 of that contain naturally processed T-cell epitopes for 3 class I amajor histocompatibility complex (MHC) and least a ADB1363 is a polypeptide encoded by a human prostate specific cDNA, one of 648 disclosed as new. Also included are nucleic acids is reasformed with the vector, an isolated antibody (or antigen binding transformed with the vector, an isolated antibody (or antigen binding ransformed with the vector, an isolated antibody (or antigen binding ransformed with a binding agent that binds to the protein or peptide, detecting the protein or peptide, detecting apparing as ADB1359, detecting the amount of polypeptide to a predetermined cutter agent and comparing the amount of polypeptide to a predetermined cutter agent and comparing the amount of polypeptide to a predetermined controlled and the comprising the applieds or proteins stimulating or expanding T cells specific of a tumour protein comprising to expanding T cells with the peptides or the isolated T cell population, treating prostate cancer in a patient comprising deministering a composition of cancer in a patient comprising the peptides or antigen prostate cancer in a patient comprising to the peptides or antigen presenting cells that express or conclusion a patient with the peptides or antigen presenting cells that express the thypidises to nucleic acid encoding the presente of cancer in a patient. The peptides for an oligonalectic confined or antigen-presenting cells expressing the nucleic acids and peptides. Antigen present sequence is a patient. The peptides or treat curled are used to simulate an immune response or treat control of the invention. Note: Except where otherwise indicated, the control of the prince data for this patient. The peptides, mucleic acids and peptides are used to simulate an immune response or treat control of the invention. Note: Except where oth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7; Length 123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 48; DB 7;
100.0%; Pred. No. 0.58;
iive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
```

ABR54582 standard; protein; 246 AA.

ABR54582;

```
ABR54582
                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present sequence is encoded by a prostate cancer-associated gene, whose CDNA is represented by Incyte clone number 1864683. The CDNA sequence is used in the method of the invention. The specification carriers a method for identifying biomolecules for the diagnosis or treatment of diseases associated with cell proliferation. The method comparises examining polynuclocatides, consisting of prostate cancerspecific genes, and genes of unknown function, expressed in CDNA libraries. The patterns of both gene sets are compared to identify genes of unknown function with similar expression patterns to the prostate cancer-specific genes. The biomolecules identified by the method form pharmaceutical compositions useful for the diagnosis and treatment of diseases associated with cell proliferation. Such diseases include cancer of the adrenal gland, bladder and bone, but especially prostate cancer. The method may also be applied using other disease- specific genes. The prostate cancer specific genes facilitate the diagnosis and treatment of prostate cancer.
                                                                                                                                                                                                             note= "potential casein kinase II phosphorylation site"
                                                                                                                                                                                                                                    note= "potential casein kinase II phosphorylation site"
                                                                                                                                                                                                                                                             'note= "potential protein kinase C phosphorylation site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Identifying biomolecules for the diagnosis and treatment of diseases associated with cell-proliferation.
                                                                                    Prostate cancer-associated gene; Incyte clone 1864683; bone cancer; cell proliferation; cancer; adrenal gland cancer; bladder cancer;
                                                           Amino acid sequence of a prostate cancer-associated protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%; Score 48; DB 3; Length 231; 100.0%; Pred. No. 1.1; o; Mismatches 0; Indels
                                                                                                                                                                                                                                                                       188. .209
/note= "potential transmembrane domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                       Sprinzak EA;
                                                                                                                                                                          l. .47
/note= "signal peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                      Klingler TM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 10; Page 50-51; 52pp; English.
                                                                                                                                                             location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                              99WO-US013524
                                                                                                                                                                                                                                                                                                                                                                                      98US-00102615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cell proliferation disorders
                                                                                                                                                                                                                                                                                                                                                                                                              (INCY-) INCYTE PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Volkmuth W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-126631/11.
N-PSDB; AAZ45677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                             prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 231 AA;
                                                                                                                                                                                                Modified-site
                                                                                                                                                                                                                        Modified-site
                                                                                                                                                                                                                                                 Modified-site
                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                              15-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                     22-JUN-1998;
                                                                                                                                                                                                                                                                                                              WO9967384-A2
                                    06-APR-2000
                                                                                                                                                                                                                                                                                                                                     29-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                      Walker MG,
           AAY54369;
                                                                                                                                                                       Peptide
                                                                                                                                                                                                                                                                          Domain
```

```
The present invention relates to novel prostate-specific proteins (PSP) and their coding sequences. The PSPs and their coding sequences are useful for stimulating an immune response in a patient, or for treating prostate cancer in a patient and for determining, detecting or diagnosing the presence of a cancer in a patient. The present sequence was used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; prostate specific cDNA; cytostatic; immunostimulant; gene therapy;
cell therapy; vaccine; T-cell epitope;
class I major histocompatibility complex allele; MHC; prostate cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New prostate-specific proteins and genes, useful in gene therapy, particularly for stimulating an immune response in a patient, or treatir prostate cancer in a patient, as well as for diagnosing prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dillon DC, Mitcham JL, Harlocker SL, Jiang Y, Henderson RA, MD, Fanger GR, Retter MW, Stolk JA, Day CH, Vedvick TS; D, Li SX, Wang A, Skeiky YAW, Hepler WT, Hural J; Li PD, Houghton RL, Vinals Y De Bassolsc, Foy TW, Watanabe Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                          therapy; prostate-specific protein; PSP; human; prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 48; DB 6; Length 246; 100.0%; Pred. No. 1.2; ive 0; Mismatches 0; Indels
                                               Prostate tumour-related protein SEQ ID 1028.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 2; Page 688-689; 691pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human P501S deletion mutant, P501S D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADB14478 standard; protein; 246 AA
                                                                                                                                                                                                                                                                                                                                                    09-MAY-2001; 2001US-00852911.
29-JUN-2001; 2001US-00895814.
10-DEC-2001; 2001US-00012896.
                                                                                                                                                                                                                                                                                                          09-MAY-2002; 2002WO-US014753.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity luv.
9, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  illustrate the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      68
                                                                                                                                                                                                                                                                                                                                                                                                                                                   (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2003-167130/16.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATCLSHSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATCLSHSV
                                                                                          Cytostatic; gene
immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 246 AA;
                                                                                                                                                                                                               WO200289747-A2.
                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in a patient
28-AUG-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Carter D, L
Mcneill PD,
                                                                                                                                                                                                                                                            14-NOV-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kalos MD, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADB14478;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Deng T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Xu J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 9
ADB14478
```

ò

ö

Gaps

· 0

Similarity 100.0%; 9; Conservative (

23 σv

45

1 GATCLSHSV GATCLSHSV

ઠે g

```
New isolated polypeptide for use in a vaccine for stimulating an immune response, or for treating or diagnosis cancer, preferably prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 49; Page; 101pp; English.
tumour; antigen presenting cell
                                                                                           25-FEB-1997; 97US-00806099.
10-AUG-1997; 97US-000904804.
09-FEB-1998; 98US-000306075.
25-FEB-1998; 98US-00015657.
14-JUL-1998; 98US-00115453.
23-SEP-1999; 99US-00153149.
15-JAN-1999; 99US-0023149.
16-JAN-1999; 99US-00288946.
12-NOV-1999; 99US-00433143.
14-JAN-2000; 99US-0043867.
27-MAR-2000; 2000US-0058167.
09-MAY-2000; 2000US-00581973.
13-JUN-2000; 2000US-0056115.
27-JUN-2000; 2000US-0056123.
09-AUG-2000; 2000US-0056123.
06-SEP-2000; 2000US-0065783.
12-JAN-2000; 2000US-0065123.
06-CCT-2000; 2000US-0065123.
06-CCT-2000; 2000US-0065123.
06-CCT-2000; 2000US-0065123.
06-EEP-2000; 2000US-0065123.
06-CT-2000; 2000US-0065123.
06-CT-2000; 2000US-0065123.
06-CT-2000; 2000US-0065123.
09-MAY-2001; 2001US-00780669.
                                                                                                                                                                                                                                                                                                                                                               2001US-00012896
2002US-00144678
                                                                            12-NOV-2002; 2002US-00294025
                                                                                                                                                                                                                                                                                                                                                                                                               Ku J, Stolk JA, Kalos MD;
                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2003-756193/71.
N-PSDB; ADB14476.
                                                                                                                                                                                                                                                                                                                                                                                            (CORI-) CORIXA CORP.
                                     US2003185830-A1
                                                                                                                                                                                                                                                                                                                                                                          09-MAY-2002;
                  Homo sapiens
```

The invention relates to an isolated polypeptide comprising no more than 11-542 amino acids of ADB13563 comprising a sequence ADB14487. The peptides comprise a fragment ADB13563 of that contain naturally processed T-cell epitopes for 3 class I major histocompatibility complex (MHC) alleles. ADB13563 is a polypeptide encoded by a human prostate specific cDNA, one of 648 disclosed ass new. Also included are nucleic acids encoding the proteins and peptides, expression vectors, a host cell transformed with the vector, an isolated antibody (or antigen binding the proteins and peptides, expression vectors, a host cell transformed with the vector, an isolated antibody (or antigen binding the presence of a cancer in a patient (comprising contacting a patient sample with a binding agent that binds to the peptides or a polypeptide to appearing as ADB13558, detecting the amount of polypeptide to a predetermined cut-off value to determine the presence of cancer), a fusion protein off value to determine the presence of cancer), a fusion protein comprising the peptides or the isolated T cell population, treating prostate cancer in a petient comprising administering a composition comprising the peptides, nucleic acids, antibodies or composition comprising the persence of a cancer in a patient and treating prostate cancer in a patient comprising

```
incubating cluster of differentiation (CD4+) and/or CD8+ T cells isolated from a patient with the peptides or antigen presenting cells that express the peptides so that the T cells proliferate, and administering the express proliferated T cells to the patient. The peptides (or an oligonucleotide that hybridises to nucleic acid encoding them), is used to detect the presence of cancer in a patient. The peptides, nucleic acids encoding, or antigen-presenting cells expressing the nucleic acids, are used to stimulate or expand T cells specific for a tumour protein. The peptides, nucleic acids, antibodies, fusion proteins, T cell populations or antigen presenting cells are used to stimulate an immune response or treat prostate cancer in a patient. The present sequence is a prostate specific protein of the invention. Note: Except where otherwise indicated, the sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from USPTO the sequence thunl?Doc1D=20030185830.
                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human, secreted protein, proliferative disorder, cancer, tumour; asthma, foetal abnormality, developmental abnormality, haematopoietic disorder; foetal abnormality, haematopoietic disorder; famune system disorder, ALDS, autoimune disease; rheumatoid arthritis; parkinson's disease; cognitive disorder; schizophrenia; skin disorder; psoriasis, sepsis, diabetes; atherosclerosis, cardiovascular disorder; inflammation, neurological disorder; Alzheimer's disease; food additive; pregnancy-related disorder; alcorder; gastrointestinal disorder; allergy, pregnancy-related disorder; endocrine disorder; allergy, cell culture; chemotaxis; vulnerary; binding partner identification;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "Corresponds to any of the naturally occuring L-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "Corresponds to any of the naturally occuring L-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note= "Corresponds to any of the naturally occuring L-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "Corresponds to any of the naturally occuring L-
                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                              100.0%; Score 48; DB 7; Length 246; 100.0%; Pred. No. 1.2; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human secreted protein variant, SEQ ID NO:147.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAE01423 standard; protein; 252 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12-NOV-1999; 99US-0164835P.
27-JUL-2000; 2000US-0221142P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08-NOV-2000; 2000WO-US030654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      amino acids"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acids"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          amino acids"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     acids"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                Query Match 100.
Best Local Similarity 100.
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Misc-difference 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Misc-difference 236
                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GATCLSHSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60 GATCLSHSV
                                                                                                                                                                                                                                                                                                                            Sequence 246 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200134629-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAE01423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAE01423
        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
```

Fiscella M, Baker KP;

```
AARD05220-AAD05282 represent cDNAs corresponding to 21 human secreted protein genes, and AAE01352-AAE01413 represent the proteins they encode. AAE014131 represent human secreted proteins they encode. AAE014131 represent human secreted proteins and their genes are useful for preventing, treating or ameliorating medical conditions, e.g., by protein or gene therapy.

The secreted proteins and be diagnosed by determining the amount of the new procein in a sample or by determining the presence of mutations in the prevence of the inventor of proteins in which they are most highly expressed, and include developing products for the diagnosis or treatment of proliferative disorders, cancer, tumours, foetal and developmental abnormalities, haematopoietic disorders, diseases of the immune system, AIDS, autoimmune disorders (e.g., rheumatoid arthritis), inflammation, allergies, contrological disorders (e.g., Alzahier's disease, Parkinson's disease), cognitive disorders, schizophrenia, asthma, skin disorders (e.g., pregnancy-related disorders, atherosclerosis, cardiovascular disorders, psoriasis), sepsis, diabetes, atherosclerosis, cardiovascular disorders, candiogenic disorders, kidney disorders, gastrointestinal disorders, profuleration, to prevent skin aging due to sunburn, to maintain or provent skin aging due to sunburn, to maintain or provent skin aging due to sunburn, to maintain or presenter trissues, to identify their cognities or all on chemotaxis, and can be used as a food additive or preservative to modify storage properties. Antibodies specific for a protein of the invention can be used as a food additive or regenerate nentioned above, and in alleviating symptoms associated with the disorders mentioned above, and in diagnostic immunoassay or enzyme linked immunosorbent assay (ELISA). The
                                                                                                                                 New nucleic acid encoding one of 21 human secreted proteins for diagnosing, preventing, treating or ameliorating medical conditions, such as autoimmune disease and cancer, and used as a food additive or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9 gene; prostate disease; benign prostatic hyperplasia; BPH;
tatitis; prostatic intraepithelial neoplasia; PIN; cancer;
screening; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 48; DB 4; Length 252; 100.0%; Pred. No. 1.2; 0; Indels ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein encoded by the consensus sequence of the PS108 gene
                                                                                                                                                                                                                                                     Disclosure; Page 476-477; 490pp; English
                                            ď,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW85068 standard, protein, 255 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in the disclosure of the invention
                                            Ruben SM, Komatsoulis GA, Wei
(HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GATCLSHSV 9
                                                                                     WPI; 2001-308779/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATCLSHSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 252 AA;
                                                                                                                                                                                                        preservative.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9850567-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW85068;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             drug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW85068
à
```

12-NOV-1998

```
New isolated prostate-specific polynuclectides - used to develop products for the diagnosis and treatment of prostate diseases, e.g. benign hyperplasia, prostatic or prostate cancer.
                                                                                                                                                                                                                                                                                                                The present sequence is encoded by the consensus sequence for a PS108 gene. The sequences are PS108 gene-genefic. They are used in the method clone sequences are PS108 gene-specific. They are used in the method of the invention. The specification describes a method for detecting the presence of a target PS108 polynucleotide in a test sample. The method comprises contacting the test sample with at least 1 PS108 specific polynucleotide or complement, and detecting the presence of the tracet PS108 polynucleotide. The products can be used for detecting, diagnosing, staging, monitoring, prognosticating, in vivo imaging, preventing or treating, or determining predistosition to diseases or conditions of the prostate such as benign prostatic hyperplasia (BPH), prostaticis, prostatic intraepithalial neoplasia (PN) and cancer. In particular the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                         Cohen M, Colpitts TL, Friedman PN, Gordon J; ss SC, Klass MR, Kratochvil JD, Roberts-Rapp L;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human prostate-related PS108 partial protein sequence SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cohen M, Colpitts TL, Friedman PN, Gordon J, Granados EN;
Billing-Medel PA, Klass MR, Roberts-Rapp L, Stroupe SD, Yu
Kratochvil JD, Russell JC, Hodges SC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; prostate cancer; PS108; antibody; tumour; metastasis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 48; DB 2; Length 255; 100.0%; Pred. No. 1.2; 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              products can be used in drug screening and gene therapy
                                                                                                                                                                                                                                                                                     Claim 17; Page 99-100; 122pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAB29268 standard; protein; 255 AA.
             98WO-US008930.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-00071710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97US-00850713.
                                            97US-00850713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-FEB-2001 (first entry)
                                                                                                                          Granados EN, Hodges SC,
Russell JC, Stroupe SD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            σ
                                                                                                                                                                        WPI; 1999-034731/03.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (ABBO ) ABBOTT LAB.
                                                                            (ABBO ) ABBOTT LAB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GATCLSHSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           69 GATCLSHSV
                                                                                                            PA,
                                                                                                                                                                                         N-PSDB; AAV71181.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 255 AA;
                                                                                                           Billing-Medel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-MAY-1998;
             01-MAY-1998;
                                             02-MAY-1997;
                                                                                                                        Granados EN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10-OCT-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US6130043-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB29268;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB29268
Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ٥;
```

ò

```
22-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-JUL-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Russell JC,
                                                                                                                                                                                                                  ..
ov
                                                                                                                                                                                                                                                                                                                                                                  AA019084;
                                                                                                                                                                                                                                                                      69
                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (FRIE/)
(GORD/)
(GCRAN/)
(HODG/)
(KRAY/)
(ROBE/)
(ROBE/)
(RUSS/)
(STRO/)
(YUHH/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (BILL/)
(COHE/)
(COLP/)
                                                                                                                                                                                                     Best Loc
Matches
                                                                                                                                                                                                                                                                                                                            AAO19084
88888888888888888
                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                         ô
                                                                                                     The present invention is related to a number of partial coding and protein sequences for the human prostate tissue protein PS108. These sequences can be used in the diagnosis and prognosis of prostate diseases, particularly prostate cancer. They can also be used to produce antibodies which can be used in treatment. The present sequence is one of the PS108 partial protein sequences
                        Methods for detecting target prostate-specific polynucleotides or diseases of the prostate (e.g. prostate cancer), comprising detecting the presence of any of PSIO8 nucleic acid sequences in a test sample.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The sequence represents the amino acid sequence of prostate-specific PS108 #1, encoded by PS108 expressed sequence tag (EST) consensus sequence. The sequence was produced from overlapping PS108 ESTs sequences to produce a full length consensus sequence. This sequence was then used to produce the PS108 polypeptide which is useful in assays for detecting antibodies to prostate trissue, and as an immunogen to produce antibodies. The polypeptide is useful for screening compounds which specifically bind to the polypeptide and for screening for drugs, compounds, or any other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Prostate; PS108; immunogen; drug screening; image localisation; diagnostic; therapeutic; prostate tissue disease; cancer; metastasis; expressed sequence tag; EST.
                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gordon J;
Roberts-Rapp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 useful in assays for detecting antibodies immunogens to produce PS108 antibodies.
                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                              100.0%; Score 48; DB 3; Length 255; 100.0%; Pred. No. 1.2;
                                                                                                                                                                                                                                                         0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Colpitts TL, Friedman PN,
Klass MR, Kratochvil JD,
Yu H,
                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Prostate-specific PS108 polypeptide #1.
                                                                              Example 1; Col 85-88; 55pp; English
                                                                                                                                                                                                                                                                                                                                                                               AAU04205 standard; protein; 255 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Col 85-87; 55pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           L5-MAR-2000; 2000US-00525397.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97US-00850713.
                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                               Ouery Match
Best Local Similarity luv...
9, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A, Cohen M,
Hodges SC,
Stroupe SD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel PS108 polypeptide
prostate tissue, and as
                                                                                                                                                                                                                                                                                                    GATCLSHSV 77
                                                                                                                                                                                                                                                                                 1 GATCLSHSV 9
WPI; 2000-655655/63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-424488/45.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (ABBO ) ABBOTT LAB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-PSDB; AAS07155
                                                                                                                                                                                                    Sequence 255 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Billingel PA,
Granados EN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JS6252047-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     02-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                    23-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-JUN-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Russell JC,
                                                                                                                                                                                                                                                                                                                                                                                                        AAU04205,
                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                          g
```

```
ö
agent which can be used to treat diseases associated with PS108. The antibody is useful to detect, or for image localisation of, PS108 antigen in a patient, for detecting or disagnosing a disease or condition, as delivery agents for therapeutic agents as well as for diagnostic tests and for screening for diseases or conditions associated with PS108, and for screening for diseases or conditions associated with PS108, antibodies for therapeutic use, for inhibiting the biological activity of PS108 in therapy (for e.g. to treat prostate tissue disease including prostate cancer and its metastases), and to detect the presence of any polypeptide in a test sample which shares one or more antigenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel PS108 polynucleotides derived from the PS108 gene, useful for detecting, diagnosing, staging, monitoring, prognosticating, in vivo imaging, preventing or treating diseases and conditions of prostate e.g., prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gordon J;
Roberts-Rapp LA;
                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; PS108; prostate cancer; prostate specific sequence; prostate;
                                                                                                                                                                                                                                           ..
0
                                                                                                                                                                                                            4; Length 255;
                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human prostate-specific PS108 protein SEQ ID NO: 36.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Colpitts TL, Friedman PN,
Klass MR, Kratochvil JD,
Yu H;
                                                                                                                                                                                                                                          .
0
                                                                                                                                                                                                              100.0%; Score 48; DB 100.0%; Pred. No. 1.2;
                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                           AA019084 standard; protein; 255 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 17; Page 46; 59pp; English.
                                                                                                                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97US-00850713.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25-APR-2001; 2001US-00841894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GORDON J.
GRANADOS E N.
HODGES S C.
KLASS M R.
KRATCCHVIL J D.
ROBERTS-RAPP L A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cohen M,
Hodges SC,
Stroupe SD,
                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cytostatic; gene therapy
                                                                                                                                                                                                                                                                                                  77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BILLINGEL P A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STROUPE S D. YU H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COLPITTS T L. FRIEDMAN P N.
                                                                                                                                                                                                                                                                      σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2002-665428/71
                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                      1 GATCLSHSV
                                                                                                                                                                                                                                                                                                  GATCLSHSV
                                                                                                                                                                                Sequence 255 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COHEN M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US2002086301-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Billingel PA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       02-MAY-1997;
01-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Granados EN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention relates to novel prostate-specific proteins (PSP) and their coding sequences. The PSPs and their coding sequences are useful for stimulating an immune response in a patient, or for treating prostate cancer in a patient and for determining, detecting or diagnosing the presence of a cancer in a patient. The present sequence was used to illustrate the invention
            The present invention relates to polynucleotide sequences derived from the human PS108 gene and capable of selectively hybridising to the PS108 gene. The sequences can be used to detect the presence of a target PS108 polynucleotide in a test sample, and to detect, monitor, prevent or treat diseases and conditions of the prostate, such as prostate cancer. The present sequence is a PS108 protein fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New prostate-specific proteins and genes, useful in gene therapy, particularly for stimulating an immune response in a patient, or treating prostate cancer in a patient, as well as for diagnosing prostate cancer in a patient.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Xu J, Dillon DC, Mitcham JL, Harlocker SL, Jiang Y, Henderson RA, Kalos MD, Fanger GR, Retter MW, Stolk JA, Day CH, Vedvick TS; Carter D, Li SX, Wang A, Skeiky YAW, Hepler WT, Hural J; Mcnaill PD, Houghton RL, Vinals Y De BassolsC, Foy TM, Watanabe Y, Deng T;
                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cytostatic, gene therapy, prostate-specific protein, \mathsf{PSP}_i human, immune response, prostate cancer.
                                                                                                                                                                                                       ..
                                                                                                                                                                  100.0%; Score 48; DB 5; Length 255; 100.0%; Pred. No. 1.2;
                                                                                                                                                                                                       Indels
                                                                                                                                                                                                       ·,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Prostate tumour-related protein SEQ ID 1029.
                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 2, Page 689-690; 691pp; English.
                                                                                                                                                                                                                                                                                                                                                               ABR54583 standard; protein; 305 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-MAY-2001; 2001US-00852911.
29-JUN-2001; 2001US-00895814.
10-DEC-2001; 2001US-00012896.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-MAY-2002; 2002WO-US014753
                                                                                                                                                                                                                                                                                                                                                                                                                                   28-AUG-2003 (first entry)
                                                                                                                                                                                                       9; Conservative
                                                                                                                                                                                                                                                                  GATCLSHSV 77
                                                                                                                                                                                                                                          1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2003-167130/16.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (CORI-) CORIXA CORP.
                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 305 AA;
                                                                                                                                     Sequence 255 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200289747-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14~NOV-2002.
                                                                                                                                                                                                                                                                                                                                                                                                ABR54583;
                                                                                                                                                                                                                                                                           69
                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                              RESULT 15
                                                                                                                                                                                                                                                                                                                                               ABR54583
                                                                                                                                                                                                                                                                                                                                                                                              XXXXXXXXXXX
                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                       임
```

Gaps

. 0

100.0%; Score 48; DB 6; Length 305; 100.0%; Pred. No. 1.5; 0; Indels ive 0; Mismatches 0; Indels

Query Match
Best Local Similarity 100.
Matches 9; Conservative

```
Search completed: August 25, 2004, 02:27:08 Job time : 2.78648 secs
                         GATCLSHSV 127
1 GATCLSHSV 9
                            119
 ò
                      OD
```

Tis Page Blank (uspto)

Sequence 111, App Sequence 113, App Sequence 947, App Sequence 947, App Sequence 490, App

```
RESULT 1

US-10-010-940-569

US-10-010-940-569

Sequence 569, Application US/10010940

Publication No. US20030088062A1

GENERAL INFORMATION:
APPLICANT: Xu, Jangchun
APPLICANT: Mitchen Jennifer L.
APPLICANT: Mitchen Jennifer L.
APPLICANT: Racos, Susan Louise
APPLICANT: Racos, Michael
APPLICANT: Racos, John
APPLICANT: Rolk, John
APPLICANT: Bay, Craig
TITLE OF INVERTION: COMPOSITIONS AND METHODS FOR THERAPY AND
TITLE OF INVERTION: CDAGNOSIS OF PROSTATE CANCER
TITLE OF INVERTION: CDAGNOSIS OF PROSTATE CANCER
TITLE OF INVERTION: CDAGNOSIS OF PROSTATE
CURRENT APPLICATION NUMBER: US/10/010,940

CURRENT FILING DATE: 20101112-05

NUMBER OF SEQ ID NOS: 575

CURRENT FILING DATE: 2011-12-05

NUMBER OF SEQ ID NOS: 575

THYPE: DOT
# US-10-144-678A-1011
US-09-48-08-1011
US-09-838-78-2
US-09-78-113
US-09-78-113
US-09-08-113
US-09-08-113
US-09-08-113
US-09-08-113
US-09-113-45-113
US-09-113-45-113
US-09-113-45-113
US-09-113-45-113
US-09-113-96-113
US-10-113-96-113
US-10-113-96-113-96-113
US-10-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-113-96-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Score 48; DB 14; 100.0%; Pred. No. 0.12; ative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-012-896-490
      Query Match 100.
Best Local Similarity 100.
Matches 9; Conservative
    3358

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

5050

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CRGANISM: Homo sapiens
US-10-010-940-569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9 GATCLSHSV 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GATCLSHSV
    TYPE: PRT
      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 569, App
Sequence 706, App
Sequence 1028, Ap
Sequence 1029, App
Sequence 1029, App
Sequence 1029, App
Sequence 1029, App
                                                                                                                                              August 25, 2004, 02:24:18; Search time 2.64235 Seconds (without alignments) 1070.372 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Published Applications AA:*

1: /cgn2_6/ptodata/1/pubpaa/USO7_PUBCOMB.pep:*
2: /cgn2_6/ptodata/1/pubpaa/PCT_NEW PUB.pep:*
4: /cgn2_6/ptodata/1/pubpaa/USO6_NEW PUB.pep:*
4: /cgn2_6/ptodata/1/pubpaa/USO6_NEW PUB.pep:*
5: /cgn2_6/ptodata/1/pubpaa/USO7_NEW PUB.pep:*
6: /cgn2_6/ptodata/1/pubpaa/USO7_NEW PUB.pep:*
7/cgn2_6/ptodata/1/pubpaa/USO8_NEW PUB.pep:*
8: /cgn2_6/ptodata/1/pubpaa/USO8_PUBCOMB.pep:*
9: /cgn2_6/ptodata/1/pubpaa/USO8_PUBCOMB.pep:*
10: /cgn2_6/ptodata/1/pubpaa/USO8_PUBCOMB.pep:*
11: /cgn2_6/ptodata/1/pubpaa/USO9E_PUBCOMB.pep:*
12: /cgn2_6/ptodata/1/pubpaa/USO9E_PUBCOMB.pep:*
13: /cgn2_6/ptodata/1/pubpaa/USO9E_PUBCOMB.pep:*
14: /cgn2_6/ptodata/1/pubpaa/USO9E_PUBCOMB.pep:*
15: /cgn2_6/ptodata/1/pubpaa/USO8_PUBCOMB.pep:*
16: /cgn2_6/ptodata/1/pubpaa/USO8_PUBCOMB.pep:*
17: /cgn2_6/ptodata/1/pubpaa/USO8_PUBCOMB.pep:*
18: /cgn2_6/ptodata/1/pubpaa/USO8_PUBCOMB.pep:*
19: /cgn2_6/ptodata/1/pubpaa/USO8_PUBCOMB.pep:*
11: /cgn2_6/ptodata/1/pubpaa/USO8_PUBCOMB.pep:*
13: /cgn2_6/ptodata/1/pubpaa/USO8_PUBCOMB.pep:*
14: /cgn2_6/ptodata/1/pubpaa/USO8_PUBCOMB.pep:*
                        GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-759-143-706
US-09-759-143-706
US-09-759-143-706
US-09-895-793-706
US-09-895-793-706
US-09-895-793-706
US-10-012-894-706
US-10-294-025-706
US-10-294-025-706
US-10-144-678A-706
US-10-144-678A-702
US-10-144-678A-1028
US-10-144-678A-1028
US-10-144-678A-1028
US-10-144-678A-1028
US-10-144-678A-1028
US-10-144-678A-1029
US-10-144-678A-1029
US-10-144-678A-1029
US-10-144-678A-1029
US-10-144-678A-1029
US-10-28-1029
                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                   1295152 segs, 314255058 residues
                                                                                                                                                                                                                                US-09-593-793A-113_COPY_367_375
48
1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                          - protein search, using sw model
                                                                                                                                                                                                                                                                                                              Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ..
                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                   Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                    Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5443410984644445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Result
```

ALIGNMENTS

ö

Gaps

..

Indels Length

Gaps

```
Sequence 706, Application US/09822827

Sequence 706, Application US/09822827

Fatent No. US2020081680A1

GENERAL INFORMATION:
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY AND
TITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER
TITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER

TITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER

CURRENT APPLICATION NUMBER: US/09/822,827

CURRENT PILING DATE: 2001-03-28

NUMBER OF SEQ ID NOS: 982

SOFTWARE: FatESQ for Windows Version 3.0

SEQ ID NO 706

LENGTH: 123

TYPE: DRT

TYPE: DRT

CORGANISM: Homo sapiens
US-09-822-827-706
                                                                                                                                                                                                                                              .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                             Query Match 100.0%; Score 48; DB 9; Length 123; Best Local Similarity 100.0%; Pred. No. 0.6; Matches 9; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 48; DB 9; Length 123; 100.0%; Pred. No. 0.6; cive 0; Mismatches 0; Indels
CURRENT FILING DATE: 2001-02-09
NUMBER OF SEQ ID NOS: 943
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 706
LENGTH: 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Henderson, Robert A.
Hural, John
McNeill, Patricia D.
Houghton, Raymond L.
Vinals de Bassols, Carlota
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 706, Application US/09895793
Publication No. US20020192763A1
GENERAL INFORMATION:
APPLICANT: Wi, Jiangchun
APPLICANT: Mitcham, Davin C.
APPLICANT: Mitcham, Dannifer L.
APPLICANT: Mitcham, Dannifer L.
APPLICANT: Kalos, Michael D.
APPLICANT: Retter, Marc W.
APPLICANT: Retter, Dannier Stolk, John A.
APPLICANT: Carter, Dannick
APPLICANT: Vedvick, Thomas S.
APPLICANT: Li, Samuel X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Skeiky, Yasır A.W.
Hepler, William T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 100.
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Foy, Teresa
Fanger, Gary R.
                                                                                                            TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wang, Aijun
                                                                                                                                                                                                                                                                                                                            45 GATCLSHSV 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                45 GATCLSHSV 53
                                                                                                                                                                                                                                                                                       1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GATCLSHSV 9
                                                                                                                                                        US-09-780-669-706
                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-822-827-706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
US-09-895-793-706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT
                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ·,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Wang, Aijun
APPLICANT: Sekity, Yasir A.W.
APPLICANT: Sekity, Yasir A.W.
APPLICANT: Hepler, William
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY AND
FILE REFERENCE: 210121.427023
CURRENT APPLICATION UNBER: US/09/759,143
CURRENT FILING DATE: 2001-01-12
NUMBER OF SEG ID NOS: 934
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Hural, John
APPLICANT: Hural, John
APPLICANT: MCMAIL, Patricia D.
APPLICANT: Houghton, Raymond L.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY AND
TITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER
FILE REPREBNCE: 210121.427024
CURRENT APPLICATION NUMBER: US/09/780, 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
100.0%; Score 48; DB 9; Length 123;
Best Local Similarity 100.0%; Pred. No. 0.6;
Matches 9; Conservative 0; Mismatches 0; Indels
RESULT 2
US-09-759-143-706
; Sequence 706, Application US/09759143
; Patent No. US202202248A1
; PENERAL INFORMATION:
; APPLICANT: Xu, Jiangchun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; Sequence 706, Application US/09780669
; Patenn No. US20020051977a1
; GENERAL INFORMATION:
; APPLICANT: Xu, Jiangchun
                                                                                                     Xu, Jiangchun
Dillon, Davin C.
Mitcham, Jennifer L.
Harlocker, Snsan L.
Jiang, Yuqui
Henderson, Robert A.
Kalos, Michael D.
Fanger, Gary R.
Fanger, Marc W.
Stolk, John A.
Day, Craig H.
Vedvick, Thomas S.
Carter, Darrick
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Xu, Jiangchun
Dillon, Davin C.
Mitcham, Jennifer L.
Harlocker, Susan L.
Jiang, Yuqui
Henderson, Robert A.
Ralos, Michael D.
Ranger, Gary R.
Retter, Marc W.
Stolk, John A.
Day, Craig H.
Day, Craig H.
Vedvick, Thomas S.
Carter, Darrick
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wang, Aijun
Skeiky, Yasir A.W.
Hepler, William
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-759-143-706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     45 GATCLSHSV 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
US-09-780-669-706
                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                         APPLICANT
                                                                                                                                                                                                                                                              APPLICANT
                                                                                                                                                                                                                                                                                                                                 APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
```

ö

Gaps

```
APPLICANT: Farger, Gary R.
APPLICANT: Mantanabe, Yoshihiro
APPLICANT: Meagher, Madeleine Joy
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY AND
TITLE OF INVENTION: DIAGNOSIS OF PROSITE CANCER
TILE REPRENCE: 210121.427C27
CURRENT APPLICATION WURBER: US/10/012,896
CURRENT APPLICATION WURBER: US/10/12,896
CURRENT FILING DATE: 2001-12-10
SOFFWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 100.0%; Prad. No. 0.6;
Matches 9; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                          Wang, Aijun
Skeiky, Yasir A.W.
Hepler, William T.
Henderson, Robert A.
Hural, John
McNeill, Patricia D.
Houghton, Raymond L.
Vinals de Bassols, Carlota
Sequence 706, Application US/10012896
Publication NO. US20020183251A1
GENERAL INFORMATION:
APPLICANT: Xu, Jiangchun
APPLICANT: Dillon, Davin C.
APPLICANT: Micham, Jennifer L.
APPLICANT: Harlocker, Susan L.
APPLICANT: Tang, Yugiu
APPLICANT: Retter, Marc W.
APPLICANT: Stolk, John A.
APPLICANT: Stolk, John A.
APPLICANT: Day, Craig H.
APPLICANT: Uedvick, Thomas S.
APPLICANT: Carter, Darrick
APPLICANT: Li, Samuel X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 8
US-10-144-678A-706
Sequence 706, Application US/10144678A
Publication No. US20030157089A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Xu, Jiangchun
APPLICANT: Dillon, Davin C.
APPLICANT: Mitcham, Jennifer L.
APPLICANT: Harlocker, Susan L.
APPLICANT: Henderson, Robert A.
APPLICANT: Henderson, Robert A.
APPLICANT: Fanger, Michael D.
APPLICANT: Referer, Marc W.
APPLICANT: Referer, Marc W.
APPLICANT: Stolk, John A.
APPLICANT: John Craig H.
APPLICANT: Vedvick, Thomas S.
APPLICANT: Cater, Darrick
APPLICANT: Cater, Darrick
APPLICANT: Li, Samuel X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wang, Aijun
Skeiky, Yasir A. W.
Hepler, William T.
Hural, John
McNeill, Patricia D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-012-896-706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45 GATCLSHSV 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Skeiky Yasir A.W.
APPLICANT: Skeiky Yasir A.W.
APPLICANT: Hepler, William.T.
APPLICANT: Henderson, Robert A.
APPLICANT: Herderson, Robert A.
APPLICANT: Hural, John
APPLICANT: Hural, John
APPLICANT: Hural, John
APPLICANT: Fughton, Raymond L.
APPLICANT: Forger, Ary R.
APPLICANT: Fanger, Gary R.
APPLICANT: Panger, Gary R.
TITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER
FILE REFREENCE: 210121.427C26
CURRENT APPLICANTION UNMERS: US/09/895,814
CURRENT FILING DATE: 2001-06-29
NUMBER OF SEQ'ID NOS: 990
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 706
LENGTH: 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ·.
  TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY AND
TITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER
FILE REPERBENCE: 210121.53402
CURRENT APPLICATION NUMBER: 2001-06-29
NUMBER OF SEQ ID NOS: 982
SOFTWARE: PastSEQ for Windows Version 3.0
SEQ ID NO 706
LENGTH: 123
TYPE: RRT
TYPE: RRT
CORCANISM: Homo sapiens
US-09-895-793-706
                                                                                                                                                                                                                                                                                                                                                                               ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Score 48; DB 9; Length 123; 100.0%; Pred. No. 0.5; ative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                            Query Match
100.0%; Score 48; DB 9; Length 123;
Best Local Similarity 100.0%; Pred. No. 0.6;
Matches 9; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NESCUL 0
Sequence 706, Application US/09895814
Sequence 706, Application US/09895814
PRUBLICANT NO. US20020193296A1
GENERAL INFORMATION:
APPLICANT: Mitcham, Jennifer L.
APPLICANT: Mitcham, Jennifer L.
APPLICANT: ATAIOCKEY, Susan L.
APPLICANT: ATAIOCKEY, Susan L.
APPLICANT: Stolk, John A.
APPLICANT: Stolk, John A.
APPLICANT: Carter, Marc W.
APPLICANT: Carter, Marc W.
APPLICANT: Carter, Day.
APPLICANT: Carter, Day.
APPLICANT: Carter, Day.
APPLICANT: Usamuel X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wang, Aijun
Skeiky, Yasir A.W.
Hepler, William T.
Henderson, Robert A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 100.
Best Local Similarity 100.
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
CORGANISM: Homo sapiens
US-09-895-814-706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45 GATCLSHSV 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATCLSHSV 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                           1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                à
```

RESULT 7 US-10-012-896-706

ö

Gaps

·,

```
Sequence 1028, Application US/10294025
; Sequence 1028, Application US/10294025
; Publication No. US/20030185830A1
; GENERAL INFORMATION:
APPLICANT: Xu, Jiangchun
APPLICANT: Stolk, John A.
; APPLICANT: Stolk, John A.
; APPLICANT: Kalos, Michael D.
; TITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER
; TITLE REFERENCE: 210121.427C29
; CURRENT APPLICATION: DIAGNOSIS OF PROSTATE
; CURRENT FILING DATE: 2002-11-12
; NUMBER OF SEQ ID NOS: 1038
; SEQ ID NO: 1038
; SEQ ID NO: 1038
; LEMMIN: 246
; TYPE: PRT
; CRGANISM: Applications
                                                                                                                                                                                                                                           APPLICANT: Deno, Ta

TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY AND

TITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER

FILE REFERENCE: 210.11.427CaB

CURRENT APPLICATION NUMBER: US/10/144,678A

CURRENT FILING DATE: 2002-08-12

NUMBER OF SEQ ID NOS: 1033

SOFTWARE: FastSEQ for Windows Version 3.0

SEQ ID NO 1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 100.0%; Pred. No. 1.2;
Matches 9; Conservative 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 100.0%; Pred. No. 1.2;
Matches 9; Conservative 0; Mismatches 0; Indels (
                                                                                                                                         McNeill, Patricia D.
Houghton, Raymond L.
Vinals y de Bassols, Carlota
Foy, Teresa M.
Watanabe, Yoshiniro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: BILLING-MEDEL, PATRICIA COHEN, MAURICE COLPITTS, TRACEY L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Sequence 36, Application US/09841894; Publication No. US20020086301A1; GENERAL INFORMATION:
                                                                 Wang, Aijun
Skeiky, Yasir A. W.
Hepler, William T.
Hural, John
      Vedvick, Thomas S.
                        Carter, Darrick
Li, Samuel X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT CORGANISM: Homo sapiens US-10-144-678A-1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60 GATCLSHSV 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60 GATCLSHSV 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 11
US-10-294-025-1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-294-025-1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 12
US-09-841-894-36
                                                                                                                                                                                     APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
  APPLICANT: X1, Jiangchun
APPLICANTION: DIAGNOSIS OF PROSTATE CANCER
FILE REFERENCE: 210121.427(29)
CURRENT APPLICATION WUNBER: US/10/294,025
CURRENT FILING DATE: 2002-11-12
NUMBER OF SEQ ID NOS: 1038
SOPTWARE: PASCEQ for Windows Version 3.0
SEQ ID NO 706
                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
0
                                                                                                                                                                                                                                                                                                                                                                        Query Match

100.0%; Score 48; DB 14; Length 123;
Best Local Similarity 100.0%; Pred. No. 0.6;
Matches 9; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 48; DB 14; Length 123; 100.0%; Pred. No. 0.6; cive 0; Mismatches 0; Indels (
Houghton, Raymond L.
Vinals y de Bassols, Carlota
Foy, Teresa M.
Matanabe, Yoshihiro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , Sequence 1028, Application US/10144678A ; Publication No. US20030157089A1 ; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Sequence 706, Application US/10294025; Publication No. US20030185830A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Xu, Jiangchun
APPLICANT: Dillon, Davin C.
APPLICANT: Mitcham, Jennifer L.
APPLICANT: Harlocker, Susan L.
APPLICANT: Jiang, Yuqiu
APPLICANT: Henderson, Robert A.
APPLICANT: Ralos, Michael D.
APPLICANT: Ranger, Gary R.
APPLICANT: Retter, Marc W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fanger, Gary R.
Retter, Marc W.
Stolk, John A.
Day, Craig H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 100.
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45 GATCLSHSV 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-294-025-706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATCLSHSV 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 10
US-10-144-678A-1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-294-025-706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        45
                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
```

Gaps

ö

Gaps

```
0
PRIEDWAN, PAULA N.
GORDON, JULIAN
GRANADOS, EDWARD N.
HODGES, STEVEN C.
KLASS, MICHAEL R.
KRATOCHVIL, JON D.
ROBERTS-RAPP, LISA
TITLE OF INVENTION: REAGENTS AND METHODS USEFUL
FOR DETECTING DISEASES OF THE PROSTATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%; Score 48; DB 12; Length 255; 100.0%; Pred. No. 1.2; ative 0; Mismatches 0; Indels C
                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
SOFTWARE: FastSED for Windows Version 2.0
SOFTWARE: EastSED for Windows Version 2.0
CURRENT APPLICATION NUMBER: US/09/841,894
FILING DATE: 25-Apr-2001
CLASSIFICATION: <UNKnown>
PRIOR APPLICATION NUMBER: 09/071,710
FILING DATE: CUNKNOWN>
APPLICATION NUMBER: 09/071,710
FILING DATE: CUNKNOWN>
TELECHOWNING/ACTION NUMBER: 35,441
REFERENCE/DOCKET NUMBER: 35,441
REFERENCE/DOCKET NUMBER: 35,441
TELECHOWNINICATION INPORMATION:
TELECHOMMENISTER 847/938-1729
TELERBHONE: 847/938-1729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:

IENGIH: 255 amino acids

TYPE: amino acid
STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: None

SEQUENCE DESCRIPTION: SEQ ID NO: 36:
US-09-841-894-36
                                                                                                                                                                                                           NUMBER OF SEQUENCES: 41
CORRESSENDENCE ADDRESS:
ADDRESSE: Abbott Laboratories
STREET: 100 Abbott Park Road
CITY: Abbott Park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: 36:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ouery Match
Best Local Similarity luv...
Best Society Similarity
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEX: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               69 GATCLSHSV 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
```

.. 0

·.

100.0%; Score 48; DB 14; Length 305; 100.0%; Pred. No. 1.4; tive 0; Mismatches 0; Indels (

Query Match
Best Local Similarity 100..

1 GATCLSHSV 9

ò

TYPE: PRT ORGANISM: Homo sapiens

US-10-144-678A-1029

APPLICANT: Skeiky Yasir A. W.
APPLICANT: Skeiky Yasir A. W.
APPLICANT: Hepler, william T.
APPLICANT: Hepler, william T.
APPLICANT: Houghton, Raymond I.
APPLICANT: Houghton, Raymond I.
APPLICANT: Vinals y de Bassols, Carlota
APPLICANT: Foy, Teresa M.
APPLICANT: Foy, Teresa M.
APPLICANT: Pongy To Matanabe, Yoshihiro
APPLICANT: Dang, To Dang, To Dang, To TITLE OF INVENTION: OMPOSITIONS AND METHODS FOR THE THERAPY AND
TITLE OF INVENTION: COMPOSITIONS OF PROSTATE CANCER
TITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER
TITLE OF INVENTION: 210121.427228
CURRENT APPLICATION NUMBER: US/10/144,678A
CURRENT APPLICATION NUMBER: 2022-08-12
NUMBER OF SEQ ID NOS: 1033
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 1029
TERMOTH: 305

Wang, Aijun Skeiky, Yasir A. W. Hepler, William T.

Carter, Darrick

Li, Samuel X.

```
Gaps
                                                                                           US-10-294-025-1029

| Sequence 1029, Application US/10294025
| Sequence 1029, Application US/10294025
| Publication No. US2030185830A1
| GENERAL INFORMATION:
| APPLICANT: Xu, Jiangchun
| APPLICANT: Stolk, John A.
| APPLICANT: Stolk, John A.
| APPLICANT: Stolk, John A.
| TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY AND ITLE OF INVENTION: DAPPLICANTION: DISPLICANT CANCER
| FILE REFERENCE: 210121.427C29
| CURRENT PILLING DATE: 2002-11-12
| NUMBER OF SEQ ID NOS: 1038
| SOFTRARE: FastSEQ for Windows Version 3.0
| SEQ ID NO 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; Score 48; DB 14; Length 305; 100.0%; Pred. No. 1.4; Live 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-012-896-1011
; Sequence 101, Application US/10012896
; Publication No. US20020183251A1
; GENERAL INFORMATION:
; APPLICANY: Xu, Jiangchun
; APPLICANY: Dillon, Davin C.
; APPLICANY: Mitcham, Jennifer L.
; APPLICANY: Harlocker, Susan L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 100.
Matches 9; Conservative
  119 GATCLSHSV 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            119 GATCLSHSV 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
CRGANISM: Homo sapiens
US-10-294-025-1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 15
r
d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
```

Sequence 1029, Application US/10144678A
PUBLIcation No. US200330157089A1
GENERAL INFORMATION:
APPLICANT: Xu, Jiangchun
APPLICANT: Dillon, Davin C.
APPLICANT: Harlocker, Susan L.
APPLICANT: Handerson, Robert A.
APPLICANT: Kalos, Michael D.

RESULT 13 US-10-144-678A-1029

g

Day, Craig H. Vedvick, Thomas S.

Fanger, Gary R. Retter, Marc W.

APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:

John A.

Stolk,

ö

```
APPLICANT: Jiang, Yuqiu
APPLICANT: Stale, Michael D.
APPLICANT: Retter Marc M.
APPLICANT: Stolk, John A.
APPLICANT: Stolk, John A.
APPLICANT: Stolk, Thomas S.
APPLICANT: Vedvick, Thomas S.
APPLICANT: Vedvick, Thomas S.
APPLICANT: Wassir A.W.
APPLICANT: Wassir A.W.
APPLICANT: Mandarane, Robert A.
APPLICANT: Mouthton, Raymond L.
APPLICANT: Mouthton, Raymond L.
APPLICANT: Mouthton, Raymond L.
APPLICANT: Mouthton, Raymond L.
APPLICANT: Mandarane Woshihiro
APPLICANT: Mandarane Yoshihiro
APPLICANT
```

Search completed: August 25, 2004, 02:34:07 Job time: 2.64235 secs

A 6

```
August 25, 2004, 02:00:53; Search time 0.800712 Seconds (without alignments) 1081.193 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                        283366
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                 US-09-593-793A-113_COPY_367_375
48
1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                   283366 segs, 96191526 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                          OM protein - protein search, using sw model
                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PIR_78:*
1: pir1:*
2: pir2:*
3: pir3:*
                                                                                                                                                                                     Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database :
                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                              Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description	asparaginyl-peptid	prot	O	hypothetical prote	aldehyde dehydroge	hypothetical prote	conserved hypothet	fasciclin II precu	hypothetical prote	ਨ	polypeptide deform	formylmethionine d	DNA-binding protei	conserved hypothet		L	homeotic protein d		azine bic	G9a protein - huma	carbamoyl-phosphat	_	hypothetical prote	sensory transducti	conserved hypothet	hypothetical prote	(EC 3.4.		indole-3-glycerol-
	ID	A55768	12	JC7125	T34469	8	S54619	F69820	A40114	T26589	In	10	AF3542	S59853	T41716	853716	A54785	S53718	QQBYPT	A83408	93	D82083	w	9	917	ŝ	99	41		S17705
	DB	7	~	~	N	ч	7	(7)	N	~	N	7	N	N	c)	7	~	N	Н	~	7	N	~	~	~	~	(7)	N	~	н
	Query Match Length	310	699	308	1208	511	156	311	868	1545	7	7	m	0	IO	383	æ	œ	4	627	1001	1076	1216	1227	64	148	174	246	246	262
~	Query Match	77.1	77.1	75.0	75.0	72.9	70.8	70.8	70.8	70.8	68.8	8.89	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	66.7	66.7	66.7	66.7	66.7	66.7
	Score	37	37	36	36	35	34	34	34	34	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	32	32	32	32	32
•	Result No.	-	7	٣	4	Ŋ	ø	7	œ	თ			12			15	16	17	18	19	20	21	22	23	24	25	26	27	28	29

indole-3-glycerol-	indole-3-glycerol-	cell division prot	hypothetical prote	B. subtilis IolD p	B. subtilis IolD p	spore germination	probable signal tr	hypothetical prote	hypothetical prote	polycomb protein e	genome polyprotein	genome polyprotein	hypothetical prote	conserved hypothet	conserved hypothet
T46856	D35115	A72362	T49682	AC1123	AE1483	A35621	T37837	T18739	T46237	T13154	VFIHJH	S15760	F82824	H83168	AB0371
0	Н	~	7	~	N	7	N	N	Ŋ	(7)	н	7	Ŋ	N	73
270	277	294	468	638	638	705	775	1106	1672	2023	2731	2733	66	163	166
66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	64.6	64.6	64.6
32	32	32	32	32	32	32	32	32	32	32	32	32	31	31	31
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

asparaginyl-peptide amidohydrolase (EC 3.5.1) - pig N:Alternate names: asparadine amidohydrolase
C;Species: Sus scrofa domestica (domestic pig)
C;Accession: A55768
R;Stewart, A.E.; Affin, S.M.; Bradshaw, R.A.
0. Biol. Chem. 470, 42-28, 1999 A; Title: The sequence of porcine protein NH-2-terminal asparagine amidohydrolase. A new
A;Reference number: A55768; MUID:95113832; PMID:7814382 A;Accession: A55768
A/Status: preliminary
Ajnolecule cype: mkn4 AjResidues: 1-310 <ste></ste>
A;Cross-references: GB:U17062; NID:9595949; PIDN:AAA65019.1; PID:9595950
C;KeyWords: nydrolase F;2-310/Product: asparaginyl-peptide amidohydrolase #status predicted <mat></mat>
Query Match 77.1%; Score 37; DB 2; Length 310;
vative 1
Oy 1 GATCLSH 7
Db 86 GATCLTH 92
RESULT 2
hypothetical protein C44B12.4 - Caenorhabditis elegans
C;Species: Caemolinabulits elegans C;Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 29-Oct-1999
C;Accession: T32512 R:Tin-Wollam, A.
ary
A/Poscripton: The sequence or c. elegans cosmia c4*biz. A/Reference number: Z21183
A;Accession: T32512
A;status: preliminary; translated itom GB/EMBL/DDDU A;Molecule type: DNA
A)Residues: 1-669 (III)
erences: EMBL:AF03t692; FIDN:AAB8332.1; GSFDB:GN00022; tal source: strain Bristol N2; clone C44B12
C; Genetics:
A;Gene: CESP:C44B12.4 A;Map position: 4
17/011 17/000 10/100 17/170
Query Match 77.1%; Score 37; DB 2; Length 669;
1; Mismat

g à

```
A, Accession: 331308
A, Accession: 331308
A, Molecule type: DNA
A, Residues: 1-511 af H1->
A, Cross-references: BNBL:217314; NID:g3361; PIDN:CAA78962.1; PID:g3362
C, Comment: This form is probably mitochondrial.
C, Genetics:
A, Genetics:
A, Genetics:
A, Genetics:
A, Description: catalyzes the oxidation of an aldehyde to an acid using NAD+ and water
A, Note: enzymes with this activity are involved in diverse metabolic pathways in various
C, Superfamily: aldehyde dehydrogenase (NAD+); aldehyde dehydrogenase homology
C, Superfamily: alcohol metabolism; mitochondrion; NAD; oxidoreductase homology
C, Reywords: alcohol metabolism; mitochondrion; NAD; oxidoreductase homology
C, Reywords: alcohol dehydrogenase (NAD+) 2 #status predicted arm aldehyde dehydrogenase homology
F, 22-511/Pomain: aldehyde dehydrogenase homology aldehyde dehydrogenase homology
F, 297, 331/Active site: Glu, Cys #status predicted
F, 483/Binding site: NAD (Cys) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A. Accession: 554619
A. Molecule type: DNA
A. Reference unumber: 866877
A. Accession: 866879
A. Accession: 866879
A. Accession: 866879
A. Accession: 866879
A. Accession: 86879
A. Accession: 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 7
F69820
conserved hypothetical protein yhbB - Bacillus subtilis
C;Species: Bacillus subtilis
C;Species: Bacillus subtilis
C;Date: 05-Dec-1997 #sequence_revision 05-Dec-1997 #text_change 20-Jun-2000
C;Accession: F69820
R;Kunst, F:, Ogasawara, N.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azevedo, V.; Berter, C.; Bron, S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, N.M.; Cho. A.; Ehrlich, S.D.; Emmerson, P.T.; Entian, K.D.; Errington, J.; Fabret, C.; Ferrari, E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hypothetical protein YOR013w - yeast (Saccharomyces cerevisiae)
NyAlternate names: hypothetical protein O2612; hypothetical protein YOL303.3
C;Species: Saccharomyces cerevisiae
C;Date: O8-Jul.1995 #sequence_revision 01-Sep-1995 #text_change 19-Apr-2002
C;Accession: S54619; S66879
R;de Haan, Wi, Maarse, A.C.; Grivell, L.A.
Submitted to the EMBL Data Library, May 1995
A;Reference number: S54617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1; Length 511;
51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 35; DB
Pred. No. 51;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 34; DB
Pred. No. 29;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A,Map position: 15R
C,Superfamily: hypothetical protein YOR013w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     72.9%;
85.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70.8%;
illarity 85.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 85.7
Matches 6; Conservative
A; Reference number: S31308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         258 GAACLSH 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GATCLSH 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATCLLH 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GATCLSH 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         П
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hypothetical protein W03A3.2 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Accession: T34469
C;Accession: T34469
R;Miller, N.
submitted to the EMBL Data Library, February 1996
A;Pescription: The sequence of C. elegans cosmid W03A3.
A;Reference number: Z21S31
A;Accession: T34469
A;Seatus: proliminary; translated from GB/EMBL/DDBJ
A;Actus: proliminary; translated from GB/EMBL/DDBJ
A;Actus: proliminary; translated from GB/EMBL/DDBJ
A;Actus: proliminary; translated from GB/EMBL/DDBJ
A;Crossidues: 1.1208 <a href="MILL">MILL</a>
A;Accession: T34469
A;Actus: proliminary; translated from GB/EMBL/DDBJ
A;Actus: proliminary; translated from GB/EMBL/DDBJ
A;Crossidues: 1.1208 <a href="MILL">MILL</a>
A;Accession: T34469
A;Accession: T34469
A;Accession: T34469
A;Accession: T34469
A;Accession: T34469
A;Accession: T3469
A;Access
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aldehyde dehydrogenase (NAD) (EC 1.2.1.3) 2 precursor, mitochondrial - yeast (Saccharomy C; Species: Saccharomyces cerevisiae C; Species: Sa-May-1993 #sequence_revision 31-Jan-1997 #text_change 03-Jun-2002 C; Accession: S31308 R; Thielen, J. submitted to the EMBL Data Library, October 1992
                                                                                                                                                                                                                                                                                                                         Signature of the protein PREF-1 - bovine cyloresis by the profession of the protein PREF-1 - bovine cyloraes: Bos primigenius taurus (cattle) cyspecies: Bos primigenius taurus (cattle) cybete: 23-Mar-2001 #sequence_revision 23-Mar-2001 #text_change 02-Aug-2002 cybete: 23-Mar-2001 #sequence_revision 23-Mar-2001 #text_change 02-Aug-2002 cybetes on: John 125 consider of the profession: John 125 commun. 264, 662-667, 1999 A; Title: Genomic organization and genetic mapping of the bovine PREF-1 gene. A; Reference number: JC7125; MUID:20012729; PMID:10543989 A; Title: Genomic organization and genetic mapping of the bovine PREF-1 gene. A; Reference number: JC7125; MUID:20012729; PMID:10543989 A; Title: Genomic organization and genetic mapping cystatus preliminary A; Residues: 1-308 c/AH>
A; Residues: 1-308 c/AH>
A; Residues: J-308 c/AH>
A; Residues: J-308 c/AH>
C; Genetics: A; Genetics: A; Gene: DIK
A; Map position: 21 (77.5 cM)
C; Superfamily: preadipocyte factor 1; EGF homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           75.0%; Score 36; DB 2; Length 1208; 85.7%; Pred. No. 69; 1; Indels ive 0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75.0%; Score 36; DB 2; Length 308; 75.0%; Pred. No. 21; 2; Indels iive 0; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 75.0
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 85.7
Matches 6; Conservative
                                                                                                      62 GTLCLSHSI 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTCLQHS 227
                                           GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GATCLSHS 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    275 GVTCLSH 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GATCLSH 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 5
S31308
```

à qq ö

Gaps

ö

δ g

ö

Gaps

ö

Gaps

. 0

```
polypeptide deformylase def [imported] - Agrobacterium tumefaciens (strain C58, Dupont) C; Species: Agrobacterium tumefaciens C; Spacession: AF2621 C; Accession: AF2621 R; Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E.; Chen, Y.; Woo, I R; Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, T.; Levy, R.; Li, M.; McClell; Karp, P.; Romero, P.; Zhang, S. Science 294, 2117-2233, 2001 A; Alauthors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-Kamm,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polypeptide deformylase (AF213822) [imported] - Agrobacterium tumefaciens (strain CS8, (C) Species: Agrobacterium tumefaciens (Species: Agrobacterium tumefaciens (C) Date: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 18-Nov-2002 (C) Accession: F97403 RGCOdier, B.; Hinkle, G.; Gattung, S.; Miller, N.; Blanchard, M.; Qurollo, B.; Goldman, A.; Liu, F.; Wollam, C.; Allinger, M.; Doughty, D.; Scott, C.; Lappas, C.; Markelz, B.; Science 294, 2332-328, 2001 A; Fitle: Genome Sequence of the Plant Pathogen and Biotechnology Agent Agrobacterium tum A; Reference number: A97359; MUID:2160851; PMID:11743194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ster, E.W.
A;Title: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens C58.
A;Reference number: AB2577; WUID:21608550; PMID:11743193
    A,Reference number: 220239
A;Accession: T26589
A;Accession: Preliminary; translated from GB/EMBL/DDBJ
A;Acture: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-1545 <WIL>
A;Residues: 1-1545 <WIL>
A;Cross-references: EMBL;AL031632; PIDN:CAA21009.1; GSPDB:GN00023; CESP:Y32B12B.4
A;Experimental source: clone Y32B12B
C;Genetics:
A;Gene: CESP:Y32B12B.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-170 <NUS-
A;Cross-references: GB:AE008688; PIDN:AAL41388.1; PID:g17738706; GSPDB:GN00186
A;Experimental source: strain C58 (Dupont)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Cross-references: GB:AE007869; PIDN:AAK86183.1; PID:g15155278; GSPDB:GN00169 C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1545;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 170;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                 A;Map position: 5
A;Introns: 49/2; 311/2; 879/2; 1116/2; 1257/3; 1404/2; 1545/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 70.8%; Score 34; DB 2;
Best Local Similarity 62.5%; Pred. No. 2e+02;
Matches 5; Conservative 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 33; DB 2;
Pred. No. 49;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A,Map position: circular chromosome C,Superfamily: polypeptide deformylase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 62.5%;
Matches 5; Conservative 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1494 ATCFTHSI 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Archoher 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 ATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-170 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 ATCLSHSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession: AF2621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Gene: AGR C 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Gene: def
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF2621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
Nature 390, 249-256, 1997

Nature 390, 249-256, 1997

A;Authors: Foulger, D; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Galler iech, J.; Harwood, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.F. Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Lardinois, Kauthors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Levine, A.; Liu, H.; Masuda, S.; Maucell Y, M.; Rivolta, C.; Rocha, E.; Roche, B.; Rose, M.; Sadaie, Y.; Sado, T.; Scanlon, Rieger, M.; Rivolta, C.; Rocha, E.; Roche, B.; Rose, M.; Sadaie, Y.; Sado, T.; Scanlon, A; Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Scanlon, A; Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Scrotakeuthi, M.; Tamakoshi, A.; Tamakoshi, A.; Tamakoshi, A.; Tamakoshi, A.; Yamanoto, H.; Yamanoto, K.; Yata, K.; Yata, K.; Yoshida, K.; Authors: Yoshikawa, H.F.; Zumstein, E.; Yoshikawa, H.; Danchin, A.; Ata, K.; Yoshida, K.; Accession: F68820
A; Accession: F68820
A; Reference number: A69580; Mulb:98044033; PMID:9384377
A; Accession: F68820
A; Residues: 1-311 «KUN>
A; Roseiumes 1-311 «KUN>
A; Roseiumes and Roseium Rose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fascialin II precursor - American bird grasshopper C;Species: Schistocerca americana (American bird grasshopper)
C;Species: Schistocerca americana (American bird grasshopper)
C;Date: 27-Mar-1992 #sequence_revision 27-Mar-1992 #text_change 17-Mar-2000
C;Accession: A40114; B31817
R;Harrelson, A.L.; Goodman, C.S.
Science 242, 700-708, 1988
A;Title: Growth cone guidance in insects: fasciclin II is a member of the immunoglobulin A;Reference number: A40114; MUD:89043938; PMID:3187519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra A;Molecule type: mRNA
A;Residues: 1-898 c4ARX
A;Residues: 1-898 c4ARX
B;Snow, P. M.; Zinn, K.; Harrelson, A.L.; McAllister, L.; Schilling, J.; Bastiani, M.J.;
Broc. Natl. Acad. Sci. U.S.A. 85, 5291-5295, 1988
A;Title: Characterization and cloning of fasciclin I and fasciclin II glycoproteins in the A;Reference number: A94202; MUID:88276943; PMID:2839842
A;Residues: 423-436 cSNO>
A;Residues: 423-436 cSNO>
A;Coss-references: GB:J03789; NID:gl60848; PID:gl60849
C;Superfamily: neural cell adhesion molecule; fibronectin type III repeat homology; immuC;Keywords: transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-Oct-1999 #text_change 15-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gabs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2; Length 311; 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 898;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 34; DB 2; Length 898
Pred. No. 1.3e+02;
2; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypothetical protein Y32B12B.4 - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text C;Accession: T26S89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R, Gardner, A. submitted to the EMBL Data Library, September 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 34; DB 2
Pred. No. 52;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   70.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   70.8%;
ilarity 71.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCLSYTI 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       449 TCLAHSI 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 TCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
les 5; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Gene: yhbB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

ö

Gaps

;

ò g

```
delta-like homeotic protein dlk, long splice form precursor - human N'Alternate names: fetal antigen 1 (FA1)
N'Alternate names: fetal antigen 1 (FA1)
N'Alternate names: fetal antigen 1 (FA1)
C'Ontains: delta-like homeotic protein dlk, short splice form
C'Spacies (Branches (Branches Ferdien) (Branches (Bra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Anotesion: S53716
A, Molecule type: mRNA
A, Molecule type: mRNA
A, Molecule type: mRNA
A, Molecule type: mRNA
A, Cross-references: EMBL:U15979; NID:G562105; PIDN:AAA75364.1; PID:G562106
A, Cross-references: EMBL:U15979; NID:G562105; PIDN:AAA75364.1; PID:G562106
A, Molecule the authors translated the codon CAG for residue 46
A, Molecule type: mRNA
A, Molecule type: mRNA
A, Residues: 1-228,302-383 < LEE2>
A, Cross-references: EMBL:U15981; NID:G562109; PIDN:AAA75365.1; PID:G562110
R, Laborda
A, Reference number: S71068
A, Reference number: S71068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: mRNA
A;Residues: 1-45,'HV',48-383 <LAB2>
A;Cross-references: BMBL:Z12172; NID:g38478; PIDN:CAA78163.1; PID:g38479
A;Otce: sequence extracted from NCBI backbone (NCBIP:125735)
A;Note: sequence extracted from NCBI backbone (NCBIP:125735)
R;Jensen, C.H.; Krogh, T.N.; Hojrup, P.; Clausen, P.P.; Skjodt, K.; Larsson, L.I.; Enghi
Eur. J. Biochem. 225, 83-92, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Accession. S71068
A;Rocession. S71068
A;Rocession. S71068
A;Rocession. S71068
A;Rosidues: 1-344,346-333 <LAB1>
A;Cross-references: EMBL:UIS959; NID:g562105; PIDN:AAA75364.1; PID:g562106
B;Laborda, U.; Sausville, B.A.; Hoffman, T.; Notario, V.
U. Biol. Chem. 268, 3817-3820, 1993
A;Title: d1k, a putative mammalian homeotic gene differentially expressed in small cell A;Reference number: A45484; MUID:93179372; PMID:8095043
                                                                                                                                                                                                                     Species: Schizosaccharomyces pombe
C; Species: Schizosaccharomyces pombe
C; Species: Schizosaccharomyces pombe
C; Species: Schizosaccharomyces pombe
C; Species: Obser-1999 #sequence_revision 03-Dec-1999 #text_change 03-Dec-1999
C; Accession: T41716
R; Rieger, M.; Lyne, M.; Rajandream, M.A.; Barrell, B.G.
R; Rieger, M.; Lyne, M.; Rajandream, M.A.; Barrell, B.G.
A; Reference number: 222012
A; Accession: T47716
A; Accession: T47716
A; Accession: T47716
A; Residues: 1-357 < RIE>
A; Residues: 1-357 < RIE>
A; Residues: 1-357 < RIE>
A; Resperimental source: strain 972h-; cosmid c821
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 33; DB 2
Pred. No. 91;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68.8%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 75.0
Matches 6; Conservative
                                             176 GAACYPHSV 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           200 ATCLLHSL 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 ATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Gene: SPDB:SPAC821.05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Map position: 1
A;Introns: 9/2; 45/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AP3542

(Formylmethionine deformylase (EC 3.5.1.31) [imported] - Brucella melitensis (strain 16M)

(Species Brucella melitensis

(Species Brucella melitensis)

(Species Brucella melitensis)

(Species Brucella melitensis)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Scincial 1.

A; Scincial 1.

A; Reference number: S59852
A, Accession: S59853
A; Moceule type: mRNA
A; Molecule type: mRNL
A; Cross-references: EMBL: X79935; NID:g1061307; PIDN: CAA56288.1; PID:g1061308
A; Cross-references: EMBL: X79935; NID:g1061307; PIDN: CAA56288.1; PID:g1061308
R; Yanagisawa, S:
Nucleic Acids Res. 23, 3403-3410, 1995
A; Title: A novel DNA-binding domain that may form a single zinc finger motif. A; Reference number: S59850; MUID: 96032831; PMID: 7567449
A; Accession: S59851
A; Status: nucleic acid sequence not shown
A; Molecule type: mRNA
A; Residues: 27-99 < YAN>
A; Residues: 27-99 < YAN>
A; Cross-references: EMBL: X79935
C; Keywords: zinc finger
                                                                                                                                                                                                 ·
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-187. «KUR»
A;Cross-references: GB:AE008918; PIDN:AAL53505.1; PID:g17984410; GSPDB:GN00191
A;Experimental source: strain 16M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
SS9853
SS9853
DNA-binding protein Dof3 - maize (fragment)
C;Species: Zea mays (maize)
C;Species: Zea mays (maize)
C;Species: Zea mays (maize)
C;Date: 15-Feb-1996 #sequence_revision 19-Apr-1996 #text_change 29-Oct-1999
C;Accession: S59853; S59851
R;Shuichi, Y.
                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                     .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68.8%; Score 33; DB 2; Length 187; 62.5%; Pred. No. 53; ive 1; Mismatches 2; Indels
                                                                                                               Length 170;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 33; DB 2; Length 302;
Pred. No. 79;
0; Mismatches 3; Indels
                                                                                                                                                                                                 2; Indels
                                                                                                               Score 33; DB 2;
Pred. No. 49;
1; Mismatches
A, Map position: circular chromosome C; Superfamily: polypeptide deformylase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A,Map position: II
C,Superfamily: polypeptide deformylase
C,Keywords: hydrolase
                                                                                                                   68.8%;
62.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68.8%;
66.7%;
                                                                          Query Match
Best Local Similarity 62.5.
S; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 62.5
For Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 66.7
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                             131 ATCLOHEI 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      143 ATCLOHEI 150
                                                                                                                                                                                                                                                                           2 ATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 ATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Gene: BMEII0264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C, Genetics:
```

ે g

```
A/Gene: GDB:DLK1; dlk; FA1; PG2; PREF-1
A/Cross-references: GDB:9988854; OMIM:176290
A/Map Dosition: 14432-14432
C/Superfamily: preadipocyte factor 1; EGF homology
C/Superfamily: preadipocyte factor 1; EGF homology
C/Superfamily: preadipocyte factor 1; EGF homology
C/Superfamily: Begins a spicing glycoprotein; transmembrane protein
F)-1-34/Domain: EGF homology #status atypical < EGFP.>
F)21-54/Domain: EGF homology #status experimental < MATA.>
F)24-228,302-333/Product: delta-like homeotic protein dlk, long splice form #status pref
F)24-228,302-333/Product: delta-like homeotic protein dlk, short splice form #status pre
F)21-24/Domain: EGF homology < EGF2.>
F)21-24/Domain: EGF homology < EGF2.>
F)21-24/Domain: EGF homology < EGF5.>
F)31-167/Domain: EGF homology < EGF5.>
F)31-167/Domain: EGF homology < EGF5.>
F)31-34/Albinding site: carbohydrate (Ser) (covalent) #status experimental
F)134/Alinding site: carbohydrate (Asn) (covalent) #status experimental
F)134/Alinding site: carbohydrate (Asn) (covalent) #status experimental
F)165,251,260/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental
F)165,122/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental
F)165,122/Binding site: carbohydrate (Thr) (covalent) (partial) #status experimental
                                                                                                                                 A;Title: Protein structure of fetal antigen 1 (FA1). A novel circulating human epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ó,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٠,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68.8%; Score 33; DB 2; Length 383; 62.5%; Pred. No. 97; 2; Indels tive 1; Mismatches 2; Indels
                                                                    number: S48713; MUID:95010145; PMID:7925474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Search completed: August 25, 2004, 02:28:40 Job time : 2.80071 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 62.5
Matches 5; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  220 GGTCLOHT 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GATCLSHS 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Бþ
```

This Page Blank (uspio)

```
homo sapien
mus musculu
sus sucrofa
saccharomyc
homo sapien
schistocerc
homo sapien
agrobacteri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rhizobium m
brucella me
rhizobium l
homo sapien
mus musculu
saccharomyc
pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pseudomonas
vibrio chol
vibrio para
vibrio vuln
homo sapien
mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rattus norv
rattus norv
azospirillu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    neisseria m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              xanthomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rhodobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        homo sapien
dictyosteli
                                                                                     August 25, 2004, 01:58:37; Search time 0.480427 Seconds (without alignments) 975.448 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P82279 |
Q96ab6 |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          028955
028955
P56847
P56847
P50748
0901dl
0902bh
0903bh
0903b
0903bh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q88a03
Q9bz19
P22699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P32822
P26938
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                        US-09-593-793A-113_COPY_367_375
48
                                                                                                                                                                                                                                                        141681 seqs, 52070155 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRBH HUMAN
PNAD HUMAN
PNAD HUMAN
PNAD HUMAN
PNAD PLOG
BHAY YEAST
TNGE HUMAN
PRAS SCHAM
KNTC HUMAN
BEF SKUNE
CARB VIBCA
CARB VIBCA
SKYS VIBCA
BATB HUMAN
BATB HUMAN
BATB HUMAN
RYS SAT
TRYA AAT
TRYA RAT
TR
                                                                                                                                                                                                                                                                                                                                                               Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                         using sw model
                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                    length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                            SwissProt_42:*
                                                                                                                                                                                1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1077
1077
1210
1263
148
                                                           protein search,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing:
                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                  Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                           OM protein
                                                                                                                                                                                                                                                                                                                                                                                                                            Database :
                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                Sequence:
                                                                                        Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Result
No.
```

Q9y6q2 homo sapien Q8v6w7 b replicase	O91a29 b replicase O8v439 b replicase O66198 b replicase	Q9pya3 m replicase P16342 m replicase	P19751 m replicase Q89bn9 bradyrhizob	O20162 chlorella v P00762 rattus norv	Q90629 gallus gall
SALF_HUMAN R1AB_CVBQ	RIAB_CVBEN RIAB_CVBLU RIAB_CVBM	R1AB_CVM2 R1AB_CVMAS	R1AB_CVMJH DEF_BRAJA	YCX8 CHLVU	TRY3_CHICK
д д			нн		н
735.	7094 7094 7094	7124	7180	177	248
66.7	66.7	66.7	66.7 64.6	64.6	64.6
32	7 7 7 8 7 7 7 8	3 2	32	31	31
3.4 3.5	3.7 3.7 3.8	€ 6 6 0	41 42	43	4.5

ALIGNMENTS

THE SECUT 1 1 10 10 10 10 10 10 10 10 10 10 10 10	AN HUMAN STANDARD; PRT; 1376 AA. آجة.	(Rel. 40, Cre (Rel. 40, Las (Rel. 42, Las	os pro	Homo sapiens (Human). Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia, Evitoria, Erimatoc, Catarutini, Erminidae, Homo	Firmaces; Cacarinini, nominicae;	TENCE FROM N.A., AND VARIANTS RP12 VAL-161; TRP-250; MET-745;	7764; TYR-948; THR-1041 AND PRO-1071. SUE-Fetal brain, and Retina;	ſ.M., van	den Born L.1., van Dilel M.A., van de Fol D.O.K., Fayne A.M., tacharya S.S., Kellner U., Hoyng C.B., Westerveld A.,		uman homologue of	pigmentosa (RP12)."; Nat. Genet. 23:217-221(1999).	LOLL DOK OF BILKETOKE TIME DOLL DEK MEN HILL	VAKIANI DOA AKO-1100, AND VAKIANI KE AKG-1101. MEDLINE=21303018; PubMed=11389483;	Hollander A.I., Heckenlively J.R., van den Born L.I., Ok v.T.M. van der Velde-Visser S.D., Kellner II., Jurklies B.	Wissing	Cruysberg J.R.M., Deutman A.F., Brunner H.G., Apfelstedt-Sylla E., Hovng C.B., Cremers F.P.M.:	per congenital amaurosis and retinitis pigmentosa with coats-like	exudative vasculopathy are associated with mutations in the crumbs homologue 1 (CRB1) gene.";	<pre>J. Hum. Genet. 69:198-203(2001). RINCTION: May be involved in cell-cell interaction in neuronal</pre>	SUBCELLULAR LOCATION: Extracellular (Potential). TISSHE SPECIFICITY: Preferential expression in retina. also	expressed in brain and fetal brain.	DISEASE: Defects in CRB1 are the cause of retinitis pigmentosa	type iz (kriz) (min:evolos). Kriz is am aucosomai recessive condition which is characterized by night blindness from early	childhood and progressive visual field loss. There is general loss of retinal migment emithelium throughout the retina and patients	DISEASE: Defects in CRB1 are a cause of Leber congenital amaurosis (LCA) [MIM:204000]. LCA designates a group of autosomal recessive	al dystrophies that represent the most common genet	ILLARITY: Contains 15 EGF-like domains.	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	T E H	CT-200 CT-200 CT-200	s pro	Homo sapien Eukaryota; Mammalia: E	NCBI_TaxID=		CYS-764; TYR TISSUE=Fetal	MEDLINE=994 den Holland	van den Bor Bhattachary	Brunner H.G Heckenlivel	"Mutations	pigmentosa Nat. Genet.	[2]	MEDLINE=213	den Holland	van Schoone	Cruysberg J	"Leber cong	exudative v					cype 12 conditi	childho			SIS	

```
/Frid=VR_011646.

L -> P (in RP12).

I -> R (in LCA).

/ FTId=VRR_011647.

/ FTId=VRR_011648.

/ FS (in RP12). with coat-like exudative vasculopathy).

/ FTId=VAR_011649.
                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /FTIG=VAR_011641.
/ C10=VAR_011641.
/ FTIG=VAR_011642.
T -> M (in RP12).
FTIG=VAR_011643.
R -> C (in RP12).
/ FTIG=VAR_011644.
/ FTIG=VAR_011644.
/ FTIG=VAR_011644.
/ FTIG=VAR_011644.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-LINKED (GLCNAC
N-LINKED (GLCNAC
N-LINKED (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-LINKED (GLCNAC,
N-LINKED (GLCNAC,
N-LINKED (GLCNAC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-LINKED (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-LINKED (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A -> V (in RF12 / FTIG=VAR 01164
           POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                      N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
POTENTIAL
1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          764
1000
1190
1243
1265
1273
161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1181
INTERID DISCUELD DISC
                                                                                                                                                                                                                                                                                                                           DISULPID
DISULPID
DISULPID
DISULPID
DISULPID
DISULPID
                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /ARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /ARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /ARIANT
 MANY 604200.

RMIN, 504200.

RMIN, 504500.

RMIN, 5
                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
 NOTE=Retina International's Scientific Newsletter;
WWN="http://www.retina-international.com/sci-news/crblmut.htm".
                                                                                                                                            EMBL; AP154671; AAF01361.1; --
HSSP; P08709; 1BF9.
Genew; HGNC:2343; CRB1.
```

```
Hydrolase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SO THE FEBRUARY SANCES OF THE PROPERTY OF THE 
                                                                                                                                                                                                                                                                                               6
                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REAL SEQUENCE FROM N.A.

REAL SEQUENCE FROM N.A.

REALINE=2238257; PubMed=1247932;

REALINE=2238257; PubMed=1247932;

RA Strauener R.D., Celing F.S., Wagner L., Shemen C.M., Schuler G.D.,

RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

Appkins R.F., Jordan H., Moree T., Max S.I., Wang J., Heibeh F.,

RA Altschul S.F., Jordan H., Moree T., Max S.I., Wang J., Heibeh F.,

RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

RA Enderton M.J., Usdin T.B., Toshiyuki S., Carninci P., Frange C.,

RA Bosak S.A., McKernen K.J., Malex J.A., Gunarathe P.H.,

RA Chards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulby S.J.,

RA Altschul D.K., Mardan A., Sodergren E.J., Lu X., Gibbs R.A.,

RA Anting M., Madan A., Young A.C., Schertz B.D., Dickson M.C.,

RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

RA Chiragesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

RA Chiragesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

RA Schein J.E., Jones S.J.W., Marra M.A.,

RA Chiracth and initial analysis of more than 15,000 full-length

RA Chard. Sci. U.S.A. 99118899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899-16899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its way non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                          ·;
                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10-OCT-2003 (Rel. 42, Created)
10-OCT-2003 (Rel. 42, Last sequence update)
10-CCT-2003 (Rel. 42, Last annotation annotation update)
10-CCT-2003 (Rel. 42, Last a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                          6
                           Score 39; DB 1; Length 1376;
Pred. No. 7.8;
2; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                309 AA
                                   81.2%;
                                                                                                              6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                ||||:||:
1226 GATCISHT 1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human)
                                                                                                                                                                                     1 GATCLSHS 8
                               Query Match
Best Local Similarity
Matches 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
```

EMBL; BC017336; AAH17336.1; -.

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and trois statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                        0643II;

10-NOV-1997 (Rel. 35, Created)

15-DEC-1998 (Rel. 37, Last sequence update)

10-OCT-2003 (Rel. 42, Last annotation update)

10-OCT-2003 (Rel. 42, Last annotation and assemble of the control of the control asparagine emidohydrotase (EC 3.5.1.-) (Protein NH2-terminal Asn amidase) (NrN-amidase) (Protein NH2-terminal asparagine amidase) (NrN-amidase) (Protein NH2-terminal asparagine amidohydrolase)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GO; GO:0005737; C:cytcplasm; IDA.
GO; GO:0005634; C:nucleus; IDA.
GO; GO:0008418; F:protein N·terminal asparagine amidohydrolas..
GO; GO:0008344; P:adult locomotory behavior; IMP.
GO; GO:0007613; P:memory; IMP.
                                                                                                  .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1; Length 309;
                                                       Length 309;
                                                                                                  0; Indels
BY SIMILARITY. 75FE6EA52347E485 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            309 AA; 34464 MW; BBB183EDD8F2521F CRC64;
                                                       Score 37; DB 1;
Pred. No. 3.9;
1; Mismatches
                                                                                                                                                                                                                                                                                    309 A.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       77.1%; Score 37;
  0 0 B
309 AA; 34546 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; US7692; AAB66490.1; -.
EMBL; US7691; AAC52885.1; -.
MGD; MGI:108471; Ntan1.
                                                         Similarity 85.7%; 6; Conservative
                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                  91
                                                            Query Match
Best Local Similarity
Matches 6; Conserv
                                                                                                                                         1 GATCLSH 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                85 GATCLTH 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hydrolase.
INIT_MET
SEQUENCE
                                                                                                                                                                                                                                                                                    PNAD MOUSE
  INIT MET
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                   PNAA)
                                                                                                                                                                                                                                       RESULT 3
PNAD_MOUSE
ID PNAD MO
```

```
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HSSP, POS091; 1CW3.
SGD; L0000075; ALD2.
InterPro; IPR002086; Aldehyde_dehydr.
                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        56466 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; Z17314; CAA78962.1; -. PIR; S31308; S31308.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               72.9%;
                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-MAY-2000 (Rel. 39,
30-MAY-2000 (Rel. 39,
16-OCT-2001 (Rel. 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                258 GAACLSH 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      331 3
511 AA;
                                      91
1 GATCLSH 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GATCLSH 7
                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                      85 GATCLTH
                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=4932;
                                                                                                                                                                                                                                                   ALD2 OR ALDH2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TNG2 protein.
                                                                                                                                   DHAY YEAST
P32872;
                                                                                                                                                                                                                                                                                                                                                                                           Thielen J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TNG2_HUMAN
P56847;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHAIN
NP BIND
ACT SITE
ACT SITE
SEQUENCE
                                                                                                                  DHAY_YEAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TNG2 HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TNG2.
                                    셤
                                                                                                                                                     쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MINIOLINE-94375451; PubMed=8089117;

WADDLINE-94375451; PubMed=8089117;

WASTER A.E., Arfin S.M., Bradshaw R.A.;

WITCHIN WHY-terminal asparagine deamidase. Isolation and

"Protein Why-terminal asparagine deamidase. Isolation and

"The characterization of a new enzyme";

"The characterization of the residues of a new enzyme enzymen enzymen
                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation. the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                           01-NOV-1997 (Rel. 35, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Protein N-terminal asparagine amidohydrolase (EC 3.5.1.-) (Protein NH2-terminal asparagine deamidase) (N-terminal Asn amidase) (NNTN-amidase) (PNAD) (Protein NH2-terminal Asn amidase) (NNTN-
                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Suina, Suidae, Sus.
                      .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A., AND SEQUENCE OF 1-17; 106-118; 214-227 AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Stewart A.E., Arfin S.M., Bradshaw R.A.;
"The sequence of portoline protein NH2-terminal asparagine
amidchydrolase. A new component of the N-end Rule pathway.";
J. Biol. Chem. 270:25-28(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         77.1%; Score 37; DB 1; Length 309; 85.7%; Pred. No. 3.9; 0; Indels iive 1; Mismatches 0; Indels
                      0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      309 AA; 34629 MW; C527D692823CE547 CRC64;
                                                                                                                                                                                            309 AA.
  Pred. No. 3.9;
                      1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBUNIT: Monomer. SUBCELLULAR LOCATION: Cytoplasmic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=95113832; PubMed=7814382;
85.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; U17062; AAA65019.1; -. PIR; A55768; A55768.
                      6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 85.7
Matches 6; Conservative
                                                                                                                                                                                            STANDARD;
                                                                                    GATCLTH 91
                                                       1 GATCLSH 7
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                       Sus scrofa (Pig).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHARACTERIZATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9823;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hydrolase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INIT MET
SEQUENCE
                                                                                                                                                                                            PNAD PIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                      Matches
                                                                                                                                                     RESULT 4
                                                                                            g
                                                                                                                                                                                                            ð
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BYMIL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                              Thesis (1993), Heinrich-Heine University / Duesseldorf, Germany.
-!- CATALYTIC ACTIVITY: An aldehyde + NAD+) + H(2)O = an acid + NADH.
-!- PATHMAY: Ethanol utilization; second step.
-!- SUBCELLULAR : ICCATION Mitochondrial matrix (Potential).
-!- SIMILARITY: Belongs to the aldehyde dehydrogenase family.
-!- CAUTION: Is not present in yeast genome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                               Saccharomyces cerevisiae (Baker's yeast).
Eukaryota, Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                     01-OCT-1993 (Rel. 27, Created)
01-OCT-1993 (Rel. 27, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Aldehyde dehydrogenase 2, mitochondrial precursor (EC 1.2.1.3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OGENASE 2. (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 35; DB 1; Length 511; Pred. No. 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY.
70EDAE951B84EE4A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALDEHYDE DEHYDROGENASE
NAD (ADP PART) (BY SIMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; irruced, 1. Pfan, PROSITE; PSO0171; aldedh; 1. PROSITE; PSO0000; ALDEHYDE DEHYDR GLU; 1. PROSITE; PSO0687; ALDEHYDE DEHYDR GLU; 1. Oxidoreductase; NAD; Mitochondrion; Transit 21 MITOCHONDRION.
511 AM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          110 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OCCUPATO
```

```
entities requires a license agreement ((or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99064 MW;
                                                                                   EMBL; J03789; AAA29810.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         70.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             71.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 71...
Log 5; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             730
113
203
300
407
509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  35
1149
1192
1297
2297
4447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     449 TCLAHSI 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 TCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OR KIAA0166.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           348
345
350
350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-OCT-1996 (
01-OCT-1996 (
28-FEB-2003 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KNTC HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P50748;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Rod).
KNTC1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 8
KNTC_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RECORDINGE OF 423-436.

RADINERS 8827643; PubMed=2839842;
RADINERS 8827643; PubMed=2839842;
RADINERS 8827643; PubMed=2839842;
RADINERS 88276436.

RADINERS 88276436.

RADINERS 88276436.

RADINERS RADINERS RECORDED A.L., McAllister L., Schilling J.,
RT Glycoproteins in the gasshopper.";
RT GLYCOPROTEINS RECORNITION MOLECULE. INVOLVED IN A PATHWAY
CC -: FUNCTION: NEURRONAL RECORNITION MOLECULE. INVOLVED IN A PATHWAY
CC -: SUBCELULAR LOCATION: Type I membrane protein.
CC -: SIMILARITY: Contains 5 immunoglobulin-like C2-type domains.
CC -: SIMILARITY: Contains 2 fibronectin type III domains.
CC -: SIMILARITY: Contains 2 fibronectin type III domains.
CC -: SIMILARITY: Contains 2 fibronectin type III domains.
CC -: SIMILARITY: Contains 2 fibronectin type III domains.
CC -: SIMILARITY: Contains 2 fibronectin type III domains.
CC -: SIMILARITY: Contains 2 fibronectin type III domains.
CC -: SIMILARITY: Contains 2 fibronectin type III domains.
CC -: SIMILARITY: Contains 2 fibronectin type III domains.
CC -: SIMILARITY: Contains 2 fibronectin type III domains.
CC -: SIMILARITY: Contains 2 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin type III domains.
CC -: SIMILARITY: Contains 3 fibronectin
                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/orsendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendanteendan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                           MEDLINE=20056259; PubMed=10588720; Marluas C., Pekarsky Y., Itoyama T., Varnum J., Bichi R., Rothstein J.L., Croce C.M.; Itoyama T., Varnum J., Bichi R., Groce C.M.; Croce C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Orthopteroidea; Orthoptera; Caelifera; Acridomorpha; Acridoidea; Acrididae; Cyrtacanthacridinae; Schistocerca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               70.8%; Score 34; DB 1; Length 110; 100.0%; Pred. No. 5.1; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        110 AA; 12856 MW; D604B1C43A9C123B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-AUG-1991 (Rel. 19, Created)
01-FFB-1994 (Rel. 28, Last sequence update)
01-CCT-2003 (Rel. 42, Last annotation update)
Fasciclin II precursor (FAS II)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Schistocerca americana (American grasshopper)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AF195821; AAF07204.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 100...
G; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88 TCLSHS 93
                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCLSHS 8
  NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MIM; 604412;
                                                                                                                                                                                                                                                                                                14032.1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SCHAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ო
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FAS2_SCHAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 7
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
```

```
.
0
modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL) . (POTENTIAL) . (POTENTIAL) .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Repeat; Immunoglobulin domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 898;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE=Bone marrow;
MEDLINE=96281124; PubMed=8724849;
Nagase T., Seki N., Ishikawa K.-I., Tanaka A., Nomura N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FASCICLIN II.
EXTRACELLULAR (POTENTIAL).
POTENTIAL.
CYTOPLASMIC (POTENTIAL).
IG-LIKE C2-TYPE 1.
IG-LIKE C2-TYPE 2.
IG-LIKE C2-TYPE 3.
IG-LIKE C2-TYPE 3.
IG-LIKE C2-TYPE 3.
IG-LIKE C2-TYPE 1.
IG-LIKE C2-TYPE 1.
IG-LIKE C2-TYPE 5.
IG-LIKE C2-TYPE 5.
IG-LIKE C2-TYPE 1.
IG-LIKE C2-TYPE 1.
IG-LIKE C2-TYPE 5.
IG-LIKE C2-TYPE 1.
IG-LIKE C2-TYPE 1.
IG-LIKE C2-TYPE 5.
IG-LIKE C2-TYPE 1.
IG-LIKE C2-T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07989EA4F39604AC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL.
N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                                                                                                                                      PIRS, A40114; A40114.

InterPro; IPR008957; FN III-like.

InterPro; IPR003561; FN III-like.

InterPro; IPR003598; Ig—11Ke.

InterPro; IPR003598; Ig—2.

Pfam; PF00041; fn3; 2.

Ffam; PF00041; ig; 5.

SMART; SM0060; FN3; 2.

SMART; SM00408; IGC2; 3.

PROSITE; PS50835; IGLIKE; 5.

Cell adhesion; Glycoprotein; Repeat; Immunoglo; Transmembrane; Signal; Neurogenesis.

SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 34; DB 1
Pred. No. 50;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT; 2209 AA
```

```
2 ATCLSHSV 9
                                                                                                                                                                                                                                                         Nester E.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
    ò
                                                                                                                                                                                                                                 The ZMIO and Rough Deal checkpoint proteins function together in a large, evolutionarily conserved complex targeted to the Kinetochore.";

Jucell Sci..114:3103-3114(2001).

Jucell Sci..114:3103-3114(2001).

Jucell Sci..114:3103-3114(2001).

Jucell Sci..114:3103-3114(2001).

Prevents calls from prematurely exiting mitosis. Required for the assembly of the dynelin-dynactin complex onto kinetochores.

SubMUNIT: Interacts with ZwIO. This interaction is required for stable association with the kinetochore.

Juberling Rocallo Space of Colling the call cycle. At interphase, uniformly distributed thoughout the coll cycle. At interphase, uniformly distributed thoughout the coll cycle. At interphase, detected at kinetochores, along spindle fibers and most prominently at the poles. By late anaphase until the end of telophase, no longer detectable on Kinetochores or along: spindle fibers, but still present at the spindle poles.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation between the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEF AGRTS STANDARD, PRT, 170 AA.
08UJD1,
28-FREB-2003 (Rel. 41, Created)
28-FREB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Peptide deformylase (EC 3.5.1.88) (PDF) (Polypeptide deformylase).
                                                                      FUNCTION, AND SUBCELLULAR LOCATION.

PUNCTION, AND SUBCELLULAR LOCATION.

Chan G.K.T., Jablonski S.A., Starr D.A., Goldberg M.L., Yen T.J.,

"Human Zwl0 and ROD are mitotic checkpoint proteins that bind to
"Prediction of the coding sequences of unidentified human genes. The coding sequences of 40 new genes (KIAA0161-KIAA0200) deduced analysis of cDNA clones from human cell line KG-1."; DNA Res. 3:17-24(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ..
0
                                                                                                                                                                                        MEDLINE-21474370; PubMed=11590237;
Scaeerou F., Starr D.A., Plano F., Papoulas O., Karess R.E.,
Goldberg M.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      70.8%; Score 34; DB 1; Length 2209; 85.7%; Pred. No. 1.38+02; ive 0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GO:0005634; C:kinetochore microtubule; IDA.
GO:0005634; C:nucleus; NAS.
GO:0005022; C:spindla pole; IDA.
GO:0005031; F:spindla pole; IDA.
GO:0005039; P:mitotic checkpoint; IDI.
GO:0007093; P:mitotic checkpoint; IDA.
GO:0006461; P:protein complex assembly; NAS.
GO:007096; P:regulation of exit from mitosis; NAS.
GO:0071096; P:regulation of exit from mitosis; NAS.
GO:0071096; P:20746 MW; 514C948733GBFDAC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  send an email to license@isb-sib.ch).
                                                                                                                                                                              FUNCTION, AND SUBCELLULAR LOCATION
                                                                                                                                                 Nat. Cell Biol. 2:944-947(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; D79988; BAA11483.1; -. Genew; HGNC:17255; KNTC1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity 85.7
nes 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCLQHSV 1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 TCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P50748; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genew; HGNC:1.
GK; P50748; -
MIM; 607363;
                                                                                                                                    kinetochores.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GO; GO: 000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEF_AGRIS

1D DEF_A

AC Q8UID

DT 28-FE

DT 28-FE

DT 28-FE

DE Pepti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
 g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation between Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Agodare B., Hinkle G., Gattung S., Miller N., Blanchard M.,

Agodare B., Hinkle G., Gattung S., Miller N., Blanchard M.,

Agodare B., Hinkle G., Gattung S., Miller N., Blanchard M.,

Agodare B., Gordon J., Vaudin M., Iartchouk O., Epp A., Liu F.,

Houmiel K., Gordon J., Vaudin M., Iartchouk O., Epp A., Liu F.,

Awollam C., Allinger M., Doughty D., Scott C., Lappas C., Markelz B.,

Planegan C., Crowell C., Gurson J., Lomo C., Sear C., Strub G.,

Cielo C., Slater S.,

"Genome sequence of the plant pathogen and biotechnology agent

"Genome sequence of the plant pathogen and biotechnology agent

"Genome sequence of the plant pathogen and biotechnology agent

"Genome sequence of the plant pathogen and biotechnology agent

"Genome sequence of the plant pathogen and biotechnology agent

"Genome sequence of the plant pathogen and biotechnology agent

"Genome sequence of the plant pathogen and biotechnology agent

"Genome sequence of the plant pathogen and biotechnology agent

"Genome sequence of the proteins Requires at least a dipeptide for an efficient rate of reaction N-terminal L-methionine is a prerequisite for activity but the enzyme has broad specificity at other positions (By similarity).

"In CATALYTIC ACTIVITY: Formyl-L-methionyl peptide + H(2)O = formate + methionyl peptide.

"In CATALYTIC ACTIVITY: Formyl-L-methionyl peptide family.

"In CATALYTIC SACTIVITY: Formyl-L-methionyl sequence family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The genome of the natural genetic engineer Agrobacterium tumefaciens
                                                                                                                                                                                                                                                    MEDIINE=2160850; Pubmed=11743193; Monks D.E., Kitajima J.P., Mood D.W., Setubal J.C., Kaul R., Monks D.E., Kitajima J.P., Mood D.W., Setubal J.C., Kaul R., Monks D.E., Almeida N.F. Jr., Woo L., Chen Y., Zhou Y., Chen L., Wood G.E., Almeida N.F. Jr., Woo L., Chan Y., Paulsen I.T., Eisen J.A., Karp P.D., Bovee D. Sr., Chann P., Clandenning J., Deatherage G., Gillet W., Grant C., Kutyavin T., Levy R., Li M.-J., McClelland E., Palmieri A., Raymond C., Rouse G., Saenphimmachak C., Wu Z., Romero P., Gordon D., Zhang S., Yoo H., Tao Y., Biddle P., Jung M., Krespan W., Perry M., Chumley F., Tingey S.V., Tomb J.-F., Gordon M.P., Olson M.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AE009008; AAL41388.1; -.
EMBL; AE007974; AAK86183.1; -.
PIR; AF2621.
PIR; AF2621.
PIR; P07403; F97403.
HAMAP; MF_00163; -; 1.
InterPro; IPR00111; Pep deformylase.
PRNINTS; PR01377; Pep deformylase; 1.
PRINTS; PR01377; Pep deformylase; 1.
PRODOM; PD003844; Pep deformylase; 1.
Protein biosynthesis; Hydrolase; Iron; Complete proteome.
ACT_SITE 137
DEF OR ATU0366 OR AGR C_640.
grobacterium tumefaciens (strain C58 / ATCC 33970).
Bacteria; Proteobacteria; Alphaproteobacteria; Rhizobiales;
Rhizobiaceae; Rhizobium/Agrobacterium group; Agrobacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1; Length 170;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAODE1D6497AD22 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IRON (BY SIMILARITY).
IRON (BY SIMILARITY).
IRON (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 33; DB 1
Pred. No. 13;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94 94 1R
136 136 IR
140 140 IR
170 AA; 19026 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68.8%;
62.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Science 294:2317-2323(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 62.5
Matches 5; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                              NCBI_TaxID=176299
```

```
A Capela D., Barloy-Hubber F., Gouzy J., Bothe G., Ampe F., Batut J., Capela D., Barloy-Hubber F., Gouzy J., Bothe G., Ampe F., Batut J., Bastard P., Backer A., Boutry M., Cadieu B., Dreano S., Gloux S., Godieu E., Goffeu A., Kahn D., Kis E., Lelaure V., Masuy D., Apoll T., Portetalle D., Puehler A., Furnelle B., Ramsperger U., Randysis of the chromosome sequence of the legume symbiont strain 1021.";

Proc. Natl. Acad. Sci. U.S.A. 98:9877-9882(2001).

Proc. Natl. Acad. Sci. U.S.A. 98:9877-9882(2001).

Proc. Natl. Acad. Sci. U.S.A. 98:9877-9882(2001).

C.: FUNCTION: Removes the formyl group from the N-terminal Met of newly synthesized proteins. Requires at least a dipeptide for a efficient rate of reaction. N-terminal L-methionine is a preferedusite for activity but the enzyme has broad specificity at other positions (3% similarity).

C.: CATALYTIC ACTIVITY: Formyl-L-methionyl peptide + H(2)O = formate + Capture Sands liven(II) ion (3% similarity).

C.: CORACTOR: Binds I iron(II) ion (3% similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                   28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Peptide deformylase (EC 3.5.1.88) (PDF) (Polypeptide deformylase).
DEF OR R00419 OR SMC01101.
Rhizobium meliloti (Sinorhizobium meliloti).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
                                                                                                                                                                                                                                                                          Bacteria; Proteobacteria; Alphaproteobacteria; Rhizobiales;
Rhizobiaceae; Sinorhizobium/Ensifer group; Sinorhizobium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 33; DB 1; Length 174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProDom; PD003844; Pep_deformylase; 1.
TIGREAMs; TIGR00079; pept_deformyl; 1.
Protein biosynthesis; Hydzolase; Iron; Complete proteome.
ACT_SITE 137 137 137 BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9782A6304F12D6D8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IRON (BY SIMILARITY).
IRON (BY SIMILARITY).
IRON (BY SIMILARITY).
                                                                                                                    174 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL, ALS91783, CAC41856.1, ALT_INIT.
HAMAP, MF_00163; 1
InterPro; IPR000181; 2
Pfan; PF01227; Pep deformylase; 1
PRINTS; PR01576; PDEFORMXLASE.
                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=21396507; PubMed=11481430;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19476 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5; Conservative
                                                                                                                    STANDARD;
131 ATCLQHEI 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 131 ATCLOHEI 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 ATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       174 AA;
                                                                                                                                                                                                                                                                                                                                     [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                NCBI TaxID=382;
                                                                                                                                                                                                                                                                                                                                                                            STRAIN=1021;
                                                                                                                    RHIME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      METAL
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Loc
Matches
                                                                                                                                       à
                    g
```

```
This SMISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its modified and this statement is long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/orsend an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SECTISS=B.suis, STRAIN=1330 / Biovar 1;

MEDLINE=22247741; bubMed=12271132;

Medlon I.T., Seshadri R., Nelson K.E., Eisen J.A., Heidelberg J.F.,

Read T.D., Dodson R.J., Umayam L., Brinkac L.M., Beanan M.J.,

Read T.D., Dodson R.J., Umayam L., Brinkac L.M., Beanan M.J.,

Nelson W.C., Ayodeji B., Kraul M., Shetty J., Malek J., Van Aken S.E.,

Riedmuller S., Tettelin H., Gill S.R., White O., Salzberg S.L.,

Riedmuller S., Tettelin H., Gill S.R., White O., Salzberg S.L.,

Hoover D.L., Lindler L.E., Halling S.M., Boyle S.M., Fraser C.M.;

The Brucella suis genome reveals fundamental similarities between animal and plant pathogens and symbionts."; 2002).

The Co. Natl. Acad. Sci. U.S.A. 99:13148-13153 (2002).

The Town Natl. Acad. Sci. U.S.A. 99:13148-13153 (2002).

The Town Natle State of Formyl group from the N-terminal Met of newly synthesized proteins. Requires at least a dipeptide for an efficient rate of reaction. N-terminal L-methionine is a prerequisite for activity but the enzyme has broad specificity at other positions (By similarity).

C.-I-GATALINITY ACTIVITY: Formyl-L-methionyl peptide + H(2)O = formate +
                                                                                                                                                                                                                                                                 SPECIES=B.melitensis; STRAIN=16M / ATCC 23456 / Biotype 1;
MEDLINE=20020109; PubMed=1175668;
DelVecchio V.G., Kapatral V., Redkar R.J., Patra G., Mujer C., Los T., Ivanova N., Anderson I., Drattacharyva A., Lykidis A., Reanik G., Jablonski L., Larsen N., D'Souza M., Bernal A., Mazur M., Goltsman E., Selkov E., Elzer P.H., Hagius S., O'Callaghan D., Letesson J.J., Iraselkorn R., Kyrpides N., Overbeek R.; Iracellular pathogen Brucella melitensis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
           28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Pepride deformylase (EC 3.5.1.88) (PDF) (Polypeptide deformylase).
DEF OR EMELIO264 OR BRA1035.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               methionyl peptide.
-!- COFACTOR: Binds 1 iron(II) ion (By similarity).
-!- SIMILARITY: Belongs to the polypeptide deformylase family.
                                                                                                                                                                  Bacteria, Proteobacteria, Alphaproteobacteria, Rhizobiales,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 33; DB 1; Length 175; Pred. No. 14; 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProDom; PD003844; Pep_deformylase; 1. TIGRRAMs; TIGRRONO?; pept_deformyl; 1. Protein biosynthesis; Hydrolase; Iron; Complete proteome. ACT_SITE 137 137 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                873A6ABCF3EFFCE2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IRON (BY SIMILARITY).
IRON (BY SIMILARITY).
IRON (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Proc. Natl. Acad. Sci. U.S.A. 99:443-448(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AE009665; AAL53505.1; ALT_INIT.
EMBL; AE014596; AAN34202.1; ALT_INIT.
TIGR; BRA1035; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HAMAP; MF_00163; -; 1.
InterPro; IPR000181; Pep_deformylase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF01327; Pep deformylase; 1. PRINTS; PR01576; PDEFORMYLASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19660 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                       Brucella melitensis, and
                                                                                                                                                                                Brucellaceae, Brucella.
NCBI_TaxID=29459, 29461;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                175 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
Matches 5; Conserv
                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                Brucella suis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
```

175 AA

PRT;

STANDARD;

DEF BRUME

RESULT 11 DEF_BRUME ID _ DEF_B

```
and pg2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss institute of Bioinformatics and the BMB outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=21082930; PubMed=11214968; Ranizu E., Kato T., Sasamoto S., Ranko T., Nakamura T., Sato S., Rawashima K., Kimura T., Kishida Y., Idesawa K., Ishikawa A., Kawashima K., Kimura T., Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A., Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimoto M., Takeuchi C., Yamada M., Tabata S., Nakazaki C., Yamada M., Tabata S., Nakazaki C., Yamada M., Tabata S., Nakazaki C., Sugimoto M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                         28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Peptide deformylase (EC 3.5.1.88) (PDF) (Polypeptide deformylase).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -!- SIMILARITY: Belongs to the polypeptide deformylase family.
                                                                                                                                                                                                                              Bacteria; Proteobacteria; Alphaproteobacteria; Rhizobiales;
Phyllobacteriaceae; Mesorhizobium.
NCBL_TaxID=381;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             68.8%; Score 33; DB 1; Length 176;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL, AP003005; BAB51419.1; -.
HAMAP; MF_00163; -; 1.
HAMAP; MF_00163; -; 1.
HAMAP; MF_00163; -; 1.
FICEPPO: PEPO deformylase.
FEM: PF01327; PEP deformylase; 1.
PRODOM; PD003844; PEP deformylase; 1.
FIGRAMS; TIGR00079; Pept_deformyl; 1.
Frotein blosynthees1s; Hydrolase; Iron; Complete proteome.
ACT_SITE 137 H37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8897DC6FBE68C045 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IRON (BY SIMILARITY).
IRON (BY SIMILARITY).
IRON (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COFACTOR: Binds 1 iron(II) ion (By similarity)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ..
                                                                                                           176 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 14;
1; Mismatches
                                                                                                                                                                                                                Rhizobium loti (Mesorhizobium loti)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19651 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 62.5
nes 5; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        methionyl peptide.
                             131 ATCLOHEI 138
 σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               136 1
140 1
176 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 ATCLSHSV 9
                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                           STRAIN=MAFF303099;
ATCLSHSV
                                                                                                         RHILO
 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                        DEF RHI
Q98D52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  METAL
 ò
```

131 ATCLOHEI 138

RESULT 13

```
SEQUENCE OF 24-60.
TISSUE=Amilotic fluid,
MEDILNE=927383; PubMed=8501199;
Jensen C.H., Teisner B., Hoejrup P., Rasmussen H.B., Madsen O.D.,
Nielsen B., Skjoedt X.,
Strictural analysis and tissue localization
of fetal antigen 1 and its relation to a human adrenal-specific cDNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Isoid=P80370-2, Sequence=VSP 001377;
TISSUE SPECIFICITY: Found within the stromal cells in close contact to the vascular structure of placental villi, yolk sac, fetal liver, adrenal cortex and pancreas and in the beta cells of the islets of langerhans in the adult pancreas. Found also in some forms of neuroendocrine lung tumor tissue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
TISSUE=Advantal gland;
MEDILINE=9197372; PubMed=8095043;
Laborda J., Sausville E.A., Hoffman T., Notario V.;
"dlk, a putestive mammalian homeotic gene differentially expressed in small cell lung carcinoma and neuroendocrine tumor cell line.";
J. Biol. Chem. 268:3817-3820(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE=Adrenal gland, and Placenta;
MEDLINE=95226449; PubMed=7711066;
Lee Y.L., Hoffman T., Laborda J.;
"dlk, pG2 and Pref-1 mRNAs encode similar proteins belonging to the EGF-like superfamily. Identification of polymorphic variants of this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=95010145; PubMed=7925474;
MEDLINE=95010145; PubMed=7925474;
Jensen C.H., Krogh T.N., Hoejrup P., Clausen P.P., Skjoedt K.,
Jensen C.H., Torine Defendants B.,
"Protein structure of feetal antigen 1 (FA1). A novel circulating human epidermal-growth-factor-like protein expressed in neuroendocrine tumors and its relation to the gene products of dlk
                                                              P80370; P15803;
01-APR-1990 (Rel. 14, Created)
10-PEB-1996 (Rel. 33, Last sequence update)
15-WAR-2004 (Rel. 43, Last annotation update)
Delta-like protein precursor (DLK) (pG2) [Contains: Fetal antigen
                                                                                                                                                                                                                                                                DLKI ÖR DLK.
Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -!- FUNCTION: May have a role in neuroendocrine differentiation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE=Adrenal gland;
MEDLINE=9017502; PubMed=2308864;
Helman L.J., Sack N., Plon S., Israel M.A.;
"The sequence of an adrenal specific human cDNA, pG2.";
Nucleic Acids Res. 18:685-685(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -!- SUBCELLULAR LOCATION: Type I membrane protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALTERNATIVE PRODUCTS:
Event=Alternative splicing; Named isoforms=2;
Comment=Additional isoforms seem to exist;
                                      383 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biochim. Biophys. Acta 1261:223-232(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Name=Long;
IsoId=P80370-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eur. J. Biochem. 225:83-92(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hum. Reprod. 8:635-641(1993)
                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 24-383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Name=Short;
DIR HUMAN

JE PROPER HER PROPERT HER PROPER
```

ò

```
(PARTIAL).
(GLCNAC. . .) (PARTIAL)
(GLCNAC. . .) (PARTIAL)
N-LINKED (GLCNAC. . .).
O-LINKED (PARTIAL).
N-LINKED (GLCNAC. . .) (PARTIAL).
N-LINKED (GLCNAC. . .) (PARTIAL).
O-LINKED (PARTIAL).
O-LINKED (PARTIAL).
O-LINKED (PARTIAL).
O-LINKED (PARTIAL).
O-LINKED (PARTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biochim. Biophys. Acta 1261:223-232(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DLKI OR DLK OR PREFI OR SCP-1.
                                                                                                                                                                                                                                                                41143 MW;
                                                                                                                                                                                                                                                                                             68.8%;
                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 62.5
Matches 5, Conservative
   47
                                                                                                                                                                                                                                                                                                                                                                                  220 GGTCLQHT 227
                                                                                                                                                                                                                                                                                                                                                               1 GATCLSHS 8
                                                                                                                                                                                                                                                                383 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           [2]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=10090;
     222422
222422
222422
2223
                                                                                                                                                                                 347
                                                                                                                                                                                                                              CONFLICT
CONFLICT
SEQUENCE
                  CARBOHYD
CARBOHYD
CARBOHYD
                                                                    CARBOHYD
                                                                                                                 CARBOHYD
CARBOHYD
VARSPLIC
     CARBOHYD
                                                                                                  CARBOHYD
                                                                                                                                                                                                                CONFLICT
                                                                                                                                                                                 VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RNA."
     g
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                        CONTROL OF STATE OF S
                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
 -!- PTM: N- and O-glycosylated.
-!- SIMILARITY: Contains 6 EGF-like domains.
-!- CAUTION: Ref.3 sequence differs from that shown due to frameshifts in positions 23, 45, 108, 199.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL.
PUTENTIAL.
EGF-LIKE 1.
EGF-LIKE 2.
EGF-LIKE 3.
EGF-LIKE 4.
EGF-LIKE 4.
EGF-LIKE 6.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DELTA-LIKE PROTEIN.
FETAL ANTIGEN 1.
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                           EMBL, 212172; CAA78163.1; --
EMBL, U15979; AAA75364.1; --
EMBL, U15981; AAA75365.1; --
EMBL, X17544; CAA3585.1; ALT_FRAME.
PIR, S53716; S53716.
HSSP, PO8709; 1BF9.
Genew; HGYC.290; DLK1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      223
233
244
94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           212
217
217
235
94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
CHAIN
CHAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULTID
DISULTID
DISULTID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
```

```
DLK MOUSE STANDARD; PRT; 385 AA.

Q09163; Q07645; Q62208;

01-NOV-1995 (Rel. 32, Created)

01-NOV-1995 (Rel. 32, Last sequence update)

28-FEB-2003 (Rel. 41, Last annoctation update)

Delta-like protein precursor (DLK) (Preadipocyte factor 1) (Pref-1)

(Adipocyte differentiation inhibitor protein) (Contains: Fetal antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. STUB-Fibroblast;
STRAINS-Wiss; TISSUB-Fibroblast;
MEDLINE-317972; PubMed-8095643;
Laborda J., Sausville E.A., Hoffman T., Notario V.;
Malk, a putestive mammalian homeotic gene differentially expressed in small cell lung carcinoma and neuroendocrine tumor cell line.";
J. Biol. Chem. 268:3817-3820(1993).
                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDIINE-9327213;

MEDIINE-9327213;

Smas C.M., Sul H.S.;

Prefel, a protein containing EGF-like repeats, inhibits adipocyte

differentiation: ";

Cell 73:725-734(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus (Mouse).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A., AND VARIANT LYS-347 DEL.
TISSUE-Adrenal gland, and Placenta;
MEDLINE-59226449; PubMed=7711066.
Lee Y.L., Helman L., Hoffman T., Laborda J.;
"dlk, pG2 and Pref-1 mRNAs encode similar proteins belonging to '
EGF-like superfamily. Identification of polymorphic variants of '
                                                                                                                                                                                                                                                                                                                                                                                                               ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Maruyama K., Nishijima S., Kuromitsu S., Ichikawa A., Masuda Takemoto T., Kodama H., Kawashima H.;
Submitted (AUG-1993) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                         Score 33; DB 1; Length 383;
Pred. No. 32;
1; Mismatches 2; Indels
/FTIG=VSP_001377.
MISSING (in clone HDLKAAG).
/FTIG=VAR. 002274.
MISSING (IN REF. 3).
QP -> HV (IN REF. 1).
QP -> IN RRFF. 1).
Q -> IN RRFF. 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1-8 FROM N.A., AND ALTERNATIVE SPLICING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        [5]
SEQUENCE OF 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A PART REPARE TO THE PROPERTY OF THE PROPERTY OF THE PART OF THE P
```

```
R -> P (IN REF. 2).
VLGTVAIVFLAKCETWVSNLBYNHTFRKKKNLLLQYNSGEB
LAVNIIFPEKIDMTTFNKEAGDEEI -> CWAPWPGSFSTS
AKFGCPTCATTTCFARRTSCCSITAARSWRSISSSPRRLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-LINKED (GLCNAC. .) (POTENTIAL).
MISSING (in 1soform D).
MISSING (in 1soform D2).
MISSING (in 1soform D2).
MISSING (In 1soform B).
MISSING (In 1soform B).
MISSING (In 1soform B).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68.8%; Score 33; DB 1; Length 385; 62.5%; Pred. No. 32; tive 1; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (IN REF. 2).
TF -> ML (IN REF. 4).
E79864FEA5AF4FFI CRC64;
    EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /FTId=CAR_000160.
N-LINKED (GLCNAC. ..).
FTId=CAR_000183.
N-LINKED (GLCNAC. ..).
N-LINKED (GLCNAC. ..).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Missing (in isoform C).
/FTId=VSP 001381.
Missing (in isoform C2)
/FTId=VSP 001382.
                                      CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         O-LINKED (PARTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FTId=CAR_000161.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FTId=CAR_000162.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           443 AA.
                                                           EGF-LIKE 1.
EGF-LIKE 2.
EGF-LIKE 4.
EGF-LIKE 4.
EGF-LIKE 5.
EGF-LIKE 5.
EGF-LIKE 5.
EGF-LIKE 5.
EGF-LIKE 5.
EGF-LIKE 8.
EGF-LIKE 8.
EGF-LIKE 8.
EGF-LIKE 8.
EGF-LIKE 9.
EGF-LIKE 9.
EGF-LIKE 9.
EGF-LIKE 1.
EGF-LI
                                                                                                                                                                                                                                                                                                                                          SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      O-LINKED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            O-LINKED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    O-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MISSING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            345 T
41320 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ilarity 62.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               165
174
216
    0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.00000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.00000

0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    258
267
271
295
303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     347
250
385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           222 GGTCLOHT 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            344 3
385 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GATCLSHS 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best_Local Similarity
Matches 5; Conserv
    100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 15
YEY2_YEAST
ID _YEY2_YEAST
AC P10356;
  DOMAIN
TRANSMEM
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                 DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                        DISULFID
                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VARIANT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                              ISULFID
                                                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /ARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARSPLIC
      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRINTS; PRO0010; BGFBLOOD.
PRINTS; PR00011; BGFBLAMININ.
SMART; SM00179; EGF CA; 1.
PROSITE; PR00021; EGF 1; 5.
PROSITE; PS00022; EGF 1; 5.
PROSITE; PS00026; EGF 2; 6.
Antigen; Transmembrane; EGF-1ike domain; Repeat; Glycoprotein; Signal; Alternative splicing.
SIGNAL
                                                                                                                                                                                  of murine
                                                                                                                CARBOHYDRATE-LINKAGE SITES.

MEDLINE=97234561; PubMed=9118998;

A Kroop T.N., Bachmann B., Teisner B., Skjoedt K., Hoejrup P.;

Kroop T.N., Bachmann B., Teisner B., Skjoedt K., Hoejrup P.;

Kroop T.N., Bachmann B., Teisner B., Skjoedt K., Hoejrup P.;

"Glycosylation analysis and protein structure determination of murint fetal antigen 1 (mFA1) - the circulating gene product of the delta-like protein (dlk), preadipocyte factor 1 (Pref-1) and stromal-cell-derived protein 1 (SCP-1) cDNAs.";

Eur. J. Blochem. 244:334-342(1997).

-!- FUNCTION: May have a role in neuroendocrine differentiation.

Thibits adipocyte differentiation.

-!- SUBGELLULAR LOCATION: Type I membrane protein.

-!- ALTERNATIVE PRODUCTS:
MEDLINE=94325292; FubMed=7519443; Smas C.M., Green D., Sul H.S.; "Structural characterization and alternate splicing of the gene encoding the preadipocyte EGF-like protein pref-1."; Biochemistry 33:9257-9265(1994).
                                                                                                                                                                                                                                                                                                                                                                                  Event=Alternative splicing; Named isoforms=6;
Comment=Additional isoforms seem to exist;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BY SIMILARITY.
DELTA-LIKE PROTEIN.
FETAL ANTIGEN 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PTM: N- and O-glycosylated. SIMILARITY: Contains 6 EGF-like domains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Name=B;
IsoId=Q09163-2; Sequence=VSP_001380;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Name=C;
IsoId=Q09163-3; Sequence=VSP_001381;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Name=D;
IsoId=Q09163-5; Sequence=VSP_001378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Name=C2;
IsoId=Q09163-4; Sequence=VSP_001382;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Isold=009163-6; Sequence=VSP_001379;
                                                                                                                                                                                                                                                                                                                                                                                                                                              IsoId=Q09163-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL, Z12171; CAA79162 1; EMBL, Z12171; CAA79162 1; EMBL, U15980; AAB60495.1; EMBL, L1271; AAA37175.1; EMBL, S71340; -; NOT ANNOTATED CDS. EMBL, D16847; BAA4121.1; EMBL, D16847; BAA4121.1; EMBL, D16847; BAA4121.1; EMBL, S53718; A54785. M4785; P00740; EDM. G1ycoxutedps, C09163; MGD; MGT:94900; D1k1. InterPro; IPR000152; Asx hydroxyl_S. InterPro; IPR001498; EGF_II. InterPro; IPR001498; EGF_II. InterPro; IPR001498; EGF_II. InterPro; IPR001408; EGF_II. InterPro; IPR001408; EGF_II. InterPro; IPR001408; EGF_II. InterPro; IPR001408; EGF_II. InterPro; IPR001409; EGF_II. InterPro; IPR001409; EGF_II. EMETRIC PRO01409; EGF_II.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24
                                                                                                                                                                                                                                                                                                                                                                                                                           Name=A;
```

0;

Gaps

·.

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                         SEQUENCE FROM N.A.

SERVINE-S286C / AB972;

MEDLINE=97313264; PubMed=9169868;

MEDLINE=97313264; PubMed=9169868;

MEDLINE=97313264; PubMed=9169868;

Araujo R., Aviles E., Enron A., Brennan T., Carpenter J., Chen E.,

Cherry J.M., Chung E., Duncan M., Guzman E., Hartzell G.,

Hunicke-Smith S., Hyaman R.W., Kayser A., Komp C., Laskhari D., Lew H.,

Lin D., Mosedale D., Nakahara K., Namath A., Norgren R., Oeffer P.,

Oh C., Petel F.X., Roberts D., Schl P., Schramm S., Shogren T.,

Smith V., Taylor P., Wei Y., Botstein D., Davis R.W.;

The nuclectide sequence of Saccharomyces cerevisiae chromosome V.";

Mature 387:78-81(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 1-230 FROM N.A.
SEQUENCE OF 1-230 FROM N.A.
MEDLINE-89083497; PubMed=2849752;
MEDLINE-89083497; PubMed=2849752;
Ohmen J.D., Klockkener-Gruissem B., McEwen J.E.;
Molecular cloning and nuclectide sequence of the nuclear PET122 gene required for expression of the mitochondrial COX3 gene in S.
cerevisiae.
                                                                                                                     Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycoties; Saccharomycetales; Saccharomycetales; Saccharomycetales; Saccharomycetales; Saccharomyces.
01-MAR-1939 (Rel. 10, Created)
01-FBB-1935 (Rel. 31, Last sequence update)
10-0CT-2003 (Rel. 42, Last annotation update)
Hypothetical 49.5 kDa protein in UBP3-PET122 intergenic region.
YER152C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 33; DB 1; Length 443;
Pred. No. 37;
2; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REVISIONS, SEQUENCE OF 1-230 FROM N.A. MEDLINE=90258894; PubMed=2160592; Ohmen J.D., Burke K.A., McEwen J.B.; "Divergent overlapping transcripts at the PET122 locus in "Divergent"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; U18917; AAB64679.1; -.
EMBL; X07558; C2A30440.1; -.
EMBL; S50655; C2A3030.1; -.
Germonline; 139230; -.
SGD; S0000954; YER122C.
Hypothetical protein.
SEQUENCE 443 AA; 49490 MW; BCA67A4D3B9D7A14 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic Acids Res. 16:10783-10802(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Saccharomyces cerevisiae.";
Mol. Cell. Biol. 10:3027-3035(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                68.8%;
55.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 55.6
Matches 5; Conservative
```

GAVCKSHAI 437 1 GATCLSHSV 9 429 à

Search completed: August 25, 2004, 02:27:45 Job time : 2.48043 secs

ö

Gaps

0;

This Page Blamk (uspho)

Title: Perfect score:

Run on:

Sequence:

Scoring table:

Searched:

Database

```
Q7zym2 xenopus lae Q2133 caenorizabdi 99346 gamma-prote Q8ebw3 shewanella Q8ebw3 shewanella Q8ebw1 mus musculu Q8v44 rhodospiril Q8v616 mus musculu Q9kv3 leishmania Qyppil homo sapien Q9pgs1 homo sapien Q9pgs0 homo sapien Q9pgs0 homo sapien Q97ep7 sulfolobus Q97ep7 sulfolobus Q97ep7 sulfolobus Q91pg5 bacillus an Q91pg5 bacillus su Q91sg4 homo sapien Q9134 homo sapien Q9414 homo sapien Q9446 homo sapien Q7vpb0 haemophilus Q7vpb0 haemophilus Q7vpb0 haemophilus Q9vcs0 plasmodium Q7vpb0 haemophilus Q7vpb0 haemophilus Q7vpb0 haemophilus Q7vpb0 sapien Q84e55 homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-DEC-2001 (TrENBLrel. 19, Created)
01-DEC-2001 (TrENBLrel. 19, Last sequence update)
01-DEC-2003 (TrENBLrel. 19, Last annotation update)
Hypothetical protein.
Macaca fascicularis (Crab eating macaque) (Cynomolgus monkey).
Macaca fascicularis (Crab eating caque) (Cynomolgus monkey).
Mammalia; Entheria; Primates; Craniata; Vertebrata; Enteleostomi; Cercopithecinae; Macaca.
Cercopithecinae; Macaca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ouery Match
Best Local Similarity 100.0%; Pred. No. 0.15;
Matches 9; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             501 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ALIGNMENTS
                                     023133
093A69
08BBW
07X4Y4
08TW1
08TW1
08F016
09P281
09P281
09P281
09P281
09P281
09P280
09P28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 315 GATCLSHSV 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GATCLSHSV 9
      Q95KC5
Q95KC5;
          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         095kc5 macaca fasc
095kc1 homo sapien
095k15 macaca fasc
08kch7 mus musculu
08kch7 mus musculu
098882 brachydanio
091ak7 brachydanio
091ak6 brachydanio
091ak6 brachydanio
091ak5 brachydanio
08brx4 mus musculu
072420 homo sapien
04113 caenorhabdi
096146 sus scrofa
046170 bos taurus
094166 sus scrofa
                                                                                                                                                                                                                             August 25, 2004, 02:22:38; Search time 2.43416 Seconds (without alignments) 1166.587 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1017041
                                        GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1017041 segs, 315518202 residues
                                                                                                                                                                                                                                                                                                                                                                   US-09-593-793A-113_COPY_367_375
48
1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                       OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPTREMBL 25:*

1: Sp_arches:*
2: Sp_bacteria:*
3: Sp_fungi:*
4: Sp_nwan:*
5: Sp_nwan:*
6: Sp_nwan:*
7: Sp_nwan:*
7: Sp_phage:*
7: Sp_phage:*
7: Sp_phage:*
7: Sp_organelle:*
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q95KC5
Q96JT2
Q96JT2
Q98KI5
Q8KZ52
Q8KZ52
Q8KWYO
Q98882
Q91AK7
Q91AK7
Q91AK6
Q1AK7
Q91AK6
Q1AK3
Q91AK6
Q1AK3
Q91AK6
Q1AK4
Q7AK4
Q7AK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10000
10000
10000
10000
87.5
87.5
87.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779.2
779
```

ô

Gaps

·,

553 AA

RESULT 2
0960T2
1D 0960T2
AC 0960T2;
DT 01-DEC-2001 (TrEMBLrel. 19, Created)

Result No.

```
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
  TISSUE=Temporal cortex;
                                                                                                                                                                                                                                                                                                                                                                   367 GATCLSHSV 375
                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            265 ATCLSHSV 272
                                                                                                                                                                                                                                                                                                                       1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 ATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q8K0H7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q8K252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q8K0H7
                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 4
Q8K252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
Q8K0H7
    g
                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUENCE FROM N.A.

MEDLINE=2288257; PubMed=12477932;

MEDLINE=2288257; PubMed=12477932;

MEDLINE=2288257; PubMed=12477932;

MA Straubberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

MA Ischul S.P., Zeeberg B., Buetow K.H., Scheefer C.F., Bhat N.K.,

MA Altschul S.P., Zeeberg B., Buetow K.H., Scheefer C.F., Bhat N.K.,

MA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

MA Sapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Frange C.,

Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gab L.J., Hulyk S.W.,

M. Nilaton D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

Mitting M., Madan A., Young A.C., Shevohenko Y., Bouffard G.G.,

M. Mitting M., Touchman J.W., Green E.D., Dickson M.C.,

M. Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,

M. Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Jones S.J., Marra M.A.; "Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                   TISSUB=Prostate;
MEDILINE-21130904; PubMed=11245466;
Xu J., Kalos M., Stolk J.A., Zasloff E.J., Zhang X., Houghton R.L.,
Filho A.M., Nolasco M., Badaro R., Reed S.G.;
"Identification and characterization of prostein, a novel prostate-
                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Hypothetical protein.
Macaca fascicularis (Crab eating macaque) (Cynomolgus monkey).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Mammalia, Eutheria, Primates; Catarrhini, Cercopithecidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 48; DB 4; Length 553; 100.0%; Pred. No. 0.16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
TISSUB-Peripheral Nervous System;
Strausberg R.;
Strausberg R.;
Submitted (APR-2003) to the EMBL/GenBank/DDBJ databases.
EMBL; AY03393; AAK54386.1; -.
EMBL; BC050416; AAH50416.1; -.
SEQUENCE 553 AA; 59322 MW; 0AFA23FBC742A667 CRC64;
(TrEMBLrel. 19, Last sequence update) (TrEMBLrel. 24, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   553 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                             Cancer Res. 61:1563-1568(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity 100.
1es 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cercopithecinae; Macaca.
NCBI_TaxID=9541;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               367 GATCLSHSV 375
                                                                   Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                          specific protein.";
                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
01-DEC-2001
01-JUN-2003
                                             Prostein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q95KIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DDT TE THE TERM TO THE TERM THE THE TERM TO THE TERM THE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
Osada N., Hida M., Kusuda J., Tanuma R., Iseki K., Hirai M., Terao K.,
Suzuki Y., Sugano S., Hashimoto K.,
"Isolation of full-length cDNA clones from macaque brain cDNA
                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Strausberg R.;
Strausberg R.;
Strausberg R.;
Exbailted (JUL-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; BC034084; AAH34084.1; -.
MGD; MGI:1922082; Prostein.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0045285; C:ubiqqiinol-cytochrome-c reductase complex; IEA.
GO; GO:0008121; F:ubiqqiinol-cytochrome-c reductase activity; IEA.
GO; GO:0006118; P:electron transport; IEA.
InterPro; IPR005805; Rieske.
PROSITE; PS00200; RIESKE.2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                      .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          87.5%; Score 42; DB 11; Length 450;
ilarity 100.0%; Pred. No. 2.3;
Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                          6; Length 553;
                                                                                                                                                                                                                                                                                                                                                      0; Indels
                                                                                          libraries.", submitted (APR-2001) to the EMBL/GenBank/DDBJ databases. EMBL, AB066851; BAB46871.1; -. Hypothetical protein. SEQUENCE 553 AA; 59392 MW; 0718F3A91FB3BF1E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           450 AA; 48261 MW; 72C703AEC131302C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-OCT-2002 (TrEMBLrel. 22, Created)
01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
101-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Hypotheital protein (Fregment).
PROSTEIN OR 2210413912RIK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-0cT-2002 (TrEMBLrel. 22, Created)
01-0CT-2003 (TrEMBLrel. 22, Last sequence update)
01-0CT-2003 (TrEMBLrel. 25, Last annotation update)
Hypothetical protein (PROSTEIN homolog).
                                                                                                                                                                                                                                                                                      100.0%; Score 48; DB 6;
100.0%; Pred. No. 0.16;
live 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             450 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              553 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
```

```
PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                     1226 GATCISHT 1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 110 GATCVSHLI 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                              1 GATCLSHS 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Receptor.
NON TER
NON TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9IAK7
Q9IAK7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 8
Q9IAK7
ID Q9IAI
AC Q9IAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
à
                                                                                                                                                                                                                                                                                                                                                                                                                                 D
                                                  ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDINE-2152405; PubMed=11734541;

MEDLINE-21522405; PubMed=11734541;

MEDLINE-21522405; PubMed=11734541;

den Hollander A.I., Johnson K., de Kok Y.J.M., Klebes A.,

den Hollander A.I., Johnson E., Cremers F.P.M.;

T. "CRB1 has a cytoplasmic domain that is functionally conserved between thuman and Drosophila.";

T. human and Drosophila.";

T. human and Drosophila.";

T. hum. Mol. Genet. 10:276-2773 (2001).

REBL, AY04325; AAL10682.1;

REBL, AY04325; F.sugar binding; IEA.

GO, GO:0005509; F.sugar binding; IEA.

RO, GO:0005509; F.sugar binding; IEA.

RILEPPRO; IPRO00152; Asx hydroxyl S.

InterPro; IPRO00142; EGF Ca.

InterPro; IPRO01418; EGF Ca.

InterPro; IPRO01818; EGF Ca.

RILEPPRO; IPRO01918; EGF Ca.

RILEPPRO; IPRO01919; Laminin_G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDIAINE=99438399; PubMed=10508521;
den HOllander A.I., ten Brink J.B., de Kok Y.J.M., van Soest S.,
van den Born I.L., van Driel M.A., van de Pol D.J.R., Payne A.M.,
Bhattacharya S.S., Kellner U., Hoyng C.B., Westerveld A.,
Heckenlively J.R., Cremers E.M., Deutman A.F.,
Heckenlively J.R., Cremers F.P.M., Bergen A.A.B.;
"Mutarions in a human homologue of Drosophila crumbs cause retinitis
pigmentosa (RP12).";
Nat. Genet. 23:217-221(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAR-2002 (TrEMBLrel. 20, Created)
U-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
CRB1 isoform II precursor.
CRB1 isoform II precursor.
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ·,
                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 100.0%; Pred. No. 2.9;
Matches 8; Conservative 0; Mismatches 0; Indels
  Strausberg R.;
Submitted (JUN-2002) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT; 1406 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        368 ATCLSHSV 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 ATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q8WWY0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 6
Q8WWY0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HED DESTRUCTION OF STATE OF ST
  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
```

```
SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE=97075163; PubMed=8917589;

METH F., Nadler W., Korsching S.;

Meth F., Nadler W., Korsching S.;

Meth F., Nadler M., Korsching S.;

Meth F., Nadler W., Korsching S.;

Nadler W., Korsching S.;

R. Proc. Natl. Acad. Sci. U.S.A. 93:13321-13326(1996).

B. R. Spitch Still Comparate to Membrane; IEA.

B. R. Go; Go; 10016021; C; integral to membrane; IEA.

Go; Go; 0004872; F: receptor activity; IEA.

Go; Go; 0004872; F: receptor activity; IEA.

Go; Go; 0001584; F: rhodopsin-like receptor activity; IEA.

Go; Go; 0001584; F: rhodopsin-like receptor protein signalin. . .; IEA.

InterPro; IRR000276; GPCR_Rhodopsn.

PEam; PP00001; 7tm 1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-FEB-1997 (TrENBLEAL 02, Created)
01-FEB-1997 (TrENBLEAL 02, Last sequence update)
01-FEB-1997 (TrENBLEAL 24, Last annotation update)
01-JUN-2003 (TrENBLEAL 24, Last annotation update)
01-JUN-2003 (TrENBLEAL 24, Last annotation update)
00-SIL 1 (R ZOR1 (Fragment).
Brachydanio rerio (Zebrafish) (Danio rerio).
Brachydanio rerio (Zebrafish) (Caniate; Vertebrata; Buteleostomi; Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes; Cyprinidae; Danio.
NCBL TAXID=7955;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Post Local Similarity 66.7%; Pred. No. 5.7;
Matches 6; Conservative 2; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1406;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                            5 25 POTENTIAL.
1406 AA; 154182 MW; F2D04D20FAA6E37D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 1
157 157
157 AA; 17656 MW; CF5738C349E526C4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
81.2%; Score 39; DB 4;
Best Local Similarity 75.0%; Pred. No. 29;
Matches 6; Conservative 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      157 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              162
InterPro; IPR001304; Lectin_C.
Pfam; PF00008; EGF; 16.
Pfam; PF00004; Lamin_G; 2.
PRINTS; PR00010; EGFBLOOD.
SWART; SW0219; EGF CA; 8.
SWART; SW0219; EGF CA; 8.
PROSITE; PS00010; AZX HYDELECTIN_I; 1.
PROSITE; PS001015; C_TYPE_LECTIN_I; 1.
PROSITE; PS01180; EGF_2; 1.
PROSITE; PS01180; EGF_2; 1.
PROSITE; PS01180; EGF_CA; 7.
PROSITE; PS01180; EGF_CA; 7.
PROSITE; PS0025; LAM_G_DOMAIN; 3.
EGF_1ike domain; Signal.
SIGNAL
SEQUENCE 1406 AA; 154182 MW; F2D04D5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
```

7877B0A46EF2B949 CRC64;

```
SECUENCE FROM N.A.
STRAIN=CSTBL/61, TISSUE=Aorta, and Vein;
MEDLINE=22354683; PubMed=12466851;
The FANTOM Consortium,
           18122 MW;
                                                                                                                                                              6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                         114 GATCVSHLI 122
                                                                                                                                                                                                                                 1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                114 GATCVSH 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            162 1
162 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (Mouse)
           162 AA;
                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GATCLSH 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Receptor.
NON_TER
NON_TER
SEQUENCE
           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QBBRX4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q8BRX4
                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 10
Q9IAKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NTANI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 11
Q8BRX4
                                                                                                                                                          Matches
           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCOCCOS ON THE SET THE SET THE SECOND ON THE SET THE SECOND ON THE SECO
                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                         日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=20183981; PubMed=10706615;

MEDLINE=20183981; PubMed=10706615;

MEDLINE=20183981; PubMed=10706615;

Mouduer S., Blancher A., Glorgi D.;

Proc. Natl. Aced. Sci. U.S.A. 97:2870-2874(2000).

Evidence for reduction of the functional fraction in primates.";

Proc. Natl. Acad. Sci. U.S.A. 97:2870-2874(2000).

EMBL; AR179845; AAR40410.1; -...

EMBL; AR179845; AR440410.1; -...

R GO; GO:0004872; F:receptor activity; IEA.

GO; GO:0004872; F:receptor activity; IEA.

GO; GO:0001884; F:rhodopsin-like receptor activity; IEA.

GO; GO:000186; P:rhodopsin-like receptor activity; IEA.

GO; GO:0001186; P:Rhodopsin-like receptor protein signalin. .; IEA.

R PROSITE; PSS0262; G_PROTEIN_RECEP_FI_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rouquier S., Blancher A., Giorgi D.,
"The olfactory receptor gene repertoire in primates and mouse:
Evidence for reduction of the functional fraction in primates.";
Proc. Natl. Acad. Sci. U.S.A. 97:2870-2874 (2000).

EMBL, AF179844, AAF40409.1;
-..
EMBL, AF179844, AAF40409.1;
-..
EMBL, AF179845, AAF40409.1;
-..
GO; GO:0016021; C:integral to membrane, IEA.
GO; GO:0016021; C:integral activity, IEA.
GO; GO:0001884; F:rhodopsin-like receptor activity; IEA.
GO; GO:0001886; F:rhodopsin-like receptor protein signalin. .; IEA.
InterPro; IPR000276; GPCR_Rhodopsn.
Pfam; PF00001; 7tm 1; 1.
PROSITE; PSE0262; G_PROTEIN_RECEP_F1_2; 1.
01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
01-JUN-2003 (TrEMBL.)
0R11.1 OR DREL.
Brachydanio rezio (Zebrafish) (Danio rezio).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
NCBI_TaxID=7955;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-OCT.2000 (TEMBLrel. 15, Created)
01-OCT.2000 (TEMBLrel. 15, Last sequence update)
01-OCT.2000 (TEMBLrel. 24, Last annotation update)
01-UJN.2003 (TEMBLrel. 24, Last annotation update)
01-GTO.2003 (TEMBLrel. 24, Last annotation update)
01-GTO.2003 (TEMBLrel. 24, Last annotation update)
01-GTO.2003 (TEMBLrel. 24, Last annotation update)
01-OCT.2003 (TEMBLrel. 25, Macraca, Chordata, Craniata, Vertebrata, Euteleostomi,
02-Minipaleryghi, Neopteryghi, Teleostei, Ostariophysi, Cypriniformes,
03-OCT.2003 (TEMBLrel. 2004)
03-OCT.2003 (TEMBLrel. 2004)
04-OCT.2003 (TEMBLrel. 2004)
05-OCT.2003 (TEMBLrel. 2004)
05-OCT.2003 (TEMBLrel. 2004)
06-OCT.2003 (TEMBLRel. 2004)
06-OCT.2004 (TEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 38; DB 13; Length 162;
Pred. No. 5.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18156 MW; FA77B0A46EFCB7A9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        162 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE=20183981; PubMed=10706615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    79.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 66.7
nes 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          114 GATCVSHLI 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         162 1
162 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1
162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Receptor.
NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Receptor.
NON_TER
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9IAK6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 9
10911A4
AC 0911A4
AC 0911A4
AC 0911A4
DT 01-00
DT 01-00
DT 01-00
DE 01-00
DE 0811A4
CON NOBL
RA NOBL

       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
```

```
RECUENCE FROM N.A.

RECUENCE FROM N.A.

RECUENCE FROM N.A.

RECUENCE 20183981; PubMed=10706615;

RECUENCE 20183981; PubMed=10706615;

RT Recular S., Blancher A., Giorgi D.;

RT Fite olfactory receptor gene repertoire in primates and mouse:

RT Freedence for reduction of the functional fraction in primates.";

RECUENCE Natl. Acad. Sci. U.S.A. 97:2870-2874(2000).

REMIS, A.T.79846; ARF40411.1; -..

REMIS, A.T.79846; ARF40411.1; -..

REMIS, A.T.79846; ARF40411.1; -..

RECUENCE OF CONTINGENT CONTINGENT OF THE ACCEPTOR OF THE
                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Brachydanio rerio (Zebrafish) (Danio rerio).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Cstariophysi; Cypriniformes;
Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
                                                                                                                    ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
Score 38; DB 13; Length 162;
Pred. No. 5.9;
2; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 77.1%; Score 37; DB 13; Length 162; Best Local Similarity 85.7%; Pred. No. 9.5; Matches 6; Conservative 1; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         162
18130 MW; E1FD981D7D448C39 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        091AKE;
01-OCT-2000 (TEMBLrel. 15, Created)
01-OCT-2000 (TEMBLrel. 15, Last sequence update)
01-UJUN-2003 (TEMBLrel. 24, Last annotation update)
01factory receptor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-MAR-2003 (TrEMBLrel, 23, Last sequence update) 01-OCT-2003 (TrEMBLrel, 25, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 162 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  293 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-terminal Asn amidase (Fragment).
     79.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAR-2003 (TrEMBLrel. 23,
```

ò 셤

```
Waterston R.;

"Unicet Submission.";

"Unicet Submission.";

"Unicet Submission.";

"Unicet Submission.";

"Unicet Submission.";

"Remai, AF036692; AAB88327.1; -...

"Remai, AF036692; AAB88327.1; -...

"Remai, AF036692; AAB88327.1; -...

"Remai, AF036692; Cintegral to membrane; IEA.

"Responded to Colonological Contegral to Membrane; IEA.

"Responded to Colonological Colono
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sus scrofa (Pig).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Suina, Suidae, Sus.
                                                                                                                       "Genome sequence of the nematode C. elegans: a platform for investigating biology. The C. elegans Sequencing Consortium."; Science 282:2012-2018(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A FEQUENCE FROM N.A.

A Fabrenkrug S.C.;

L Submitted (Aug-2000) to the EMBL/GenBank/DDBJ databases.

EMBL, AVOOT208; AAG05619.1; -.

R InterPro; IPR006209; EGF_like.

R InterPro; IPR006210; IEGF.

R Pfam; PF00008; EGF; 1.

R PR0STTE; PS00122; EGF; 1.

R PROSTTE; PS01186; EGF. 1.

R PROSTTE; PS01186; EGF_2; 1.

R EGF-like domain.

I NON TER

I NON TER

I NON TER

I SEQÜENCE 135 AA; 14636 MW; 1AF406B033B24EA7 CRC64;
                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN=Bristol N2,
Tin-Wollam A.;
Tin-wollam A.;
Tin-sequence of C, elegans cosmid C44B12.";
Submitted (DEC-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Pref-1 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                77.1%; Score 37; DB 5; 66.7%; Pred. No. 37; rative 1; Mismatches :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75.0%; Score 36; DB 6; 75.0%; Pred. No. 13; ative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                   STRAIN=Bristol N2;
MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62 GTLCLSHSI 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GATCLSHSV 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GATCLSHS 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. STRAIN=Bristol N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9823;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9GL46
Q9GL46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9GL46
                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE STATE OF THE STATE OF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ô
the RIKEN Genome Exploration Research Group Phase I & II Team;
"Analysis of the mouse transcriptome based on functional annotation of
60,770 full-length CDNAs";
Mature 420:553-573 (2002).
EMBL, AXO41112; BAC30825.1; -.
EMBL, AXO41112; BAC30825.1; -.
GO; GO:0005737; C:cytoplasm; IDA.
GO; GO:0005737; C:cytoplasm; IDA.
GO; GO:0005644; C:nucleus; IDA.
GO; GO:0005644; P:radult locomotory behavior; IMP.
GO; GO:0008344; P:radult locomotory behavior; IMP.
GO; GO:0007533; P:memory; IMP.
SEQUENCE 293 AA; 32710 MW; BF34E7DA8B561661 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Metazoa, Nematoda, Chromadorea, Rhabditida, Rhabditoidea,
Rhabditidae, Peloderinae, Caenorhabditis.
NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
Jiang C.L., Yu L., Fan Y.X., Tu Q., Jiang J.X., Zhao S.Y.;
Cloning and expression of a novel human CDNA homology to murine N-
terminal asparagine amidohydrolase (Ntanl) mRNA.";
Submitted (JUL-2003) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 77.1%; Score 37; DB 11; Length 293; Best Local Similarity 85.7%; Pred. No. 17; Matches 6; Conservative 1; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             77.1%; Score 37; DB 4; Length 310; 85.7%; Pred. No. 18; ive 1; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. Zhang M., Chen S.Y., Zhao S.Y., Zhao Y. Yu L., Xin Y.R., Zhang M., Chen S.Y., Zhao S.Y., Submitted (SEP-1998) to the EMBL/GenBank/DDBJ databases. EMBL; AF092440; AAP97215.1; -. Hydrolase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            310 AA; 34691 MW; 44C92804CB4CA625 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-07-2003 (TrEMBLrel. 25, Created)
01-07-2003 (TrEMBLrel. 25, Last sequence update)
01-07-2003 (TrEMBLrel. 25, Last annotation update)
N-terminal asparagine amidohydrolase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              669 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 044143;
01-JUN-1998 (TrEMBLrel. 06,
01-JUN-1998 (TrEMBLrel. 06,
01-OCT-2003 (TrEMBLrel. 25,
Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 85.7
Matches 6, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C44B12.4.
Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATCLTH 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ||||||:|
GATCLTH 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GATCLSH 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GATCLSH 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q724Z0
Q724Z0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
```

ö

Gaps

·.

2; Indels

Length 669;

ò

; 0

Indels

Length 135;

044143

ò

31 GGTCLOHS 38

ВÞ

```
Gaps
                                                                                                                                                                                                                                            Bos taurus (Bovine).
Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovine; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 75.0%; Score 36; DB 6; Length 308; Best Local Similarity 75.0%; Pred. No. 28; Matches 6; Conservative 0; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. TISSUBERT; MINOSHims Y., Sasaki Y.; Minoshims Pa., Taniguchi Y., Sasaki Y.; Submitted (NOV-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                         01-JUN-1998 (TrEMBLrel. 06, Created)
01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Preadipocyte factor-1.
                                                       308 AA.
                                                       PRT;
                                                    PRELIMINARY;
                                                          046370
RESULT 15
046370
01-070
0T 01-170
0T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
```

1 GATCLSHS 8

ô

220 GGTCLQHS 227

g

Search completed: August 25, 2004, 02:31:21 Job time : 5.43416 secs

```
August 25, 2004, 01:54:26; search time 171.214 Seconds (without alignments) 912.596 Million cell updates/sec
                                                                                                                                                                                                             1 MVQRLWVSRLLRHRKAQLLL.....AIYFATQVVFDKSDLAKYSA 553
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                        1586107 segs, 282547505 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                       - protein search, using sw model
                                                                                                                                                                                                                                                    BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              geneseqp2000s:*
geneseqp2001s:*
geneseqp2003s:*
geneseqp2003as:*
geneseqp2003bs:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A_Geneseq_29Jan04:*
1: geneseqp1980s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                geneseqp1990s:*
                                                                                                                                                                               US-09-593-793A-113
                                                                                                                                                                                                                                                                                                                                                                             length: 0
length: 200000000
                                                                                                                                                                             Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                               Minimum DB seq
Maximum DB seq
                                                                   OM protein
                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
                                                                                                       Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		Description	Aaw69385 Prostate	Aaw71869 Amino aci	005	Aab28527 Protein e	11	117 Human	63 Human	Aab74800 Prostate	Aag99002 Human pro	0 Human	53	61	4 Human		Human			Abb77575 Human mas	Abr54334 Prostate	Adb13563 Human pro	Aab74830 Prostate	0	Aam50661 Thioredox	Aam01318 Alpha pre	
SUMMARIES		qi		AAW71869	AAY82002	AAB28527	ABG94411	AAM01117	ø	AAB74800	AAG99002	AAG62150	ABU71653	AAU04961	AAU10324	ABB95222	AAU82643	ABG61900	ABG76665	ABB77575	ABR54334	ADB13563	m	ABU71860	AAM50661	AAM01318	ABU71887
		DB	2	~	ო	m	m	4	4	4	4	4	4	4	Ŋ	S	S	Ŋ	ស	ഹ	ω	۲-	4	4	ហ	4	4
		Match Length	L LO	IJ	S	553	S	S	Ŋ	S	IJ	IJ	£	Ŋ	IJ	S	S	IJ	Ŋ	ഹ	S	S	7	1079	н	595	2
d	Query	Match	0	00	00	ö	00	00	00	00	00	000	0	00	00	00	00	00	8	8	100.0	100.0		100.0		90.7	
		Score	1 77	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	86	88	2861	60	50	69
	Result	No.		(3)	m	4	5	ø	7	ω	O	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

Aam50662 Thioredox	Abr54583 Prostate	Adb14479 Human P50	Aam01230 P553S spl	Aau69875 Human pro	Abu71766 Prostate		Abr54447 Prostate	Adb14158 Human pro	Aae01362 Human qen	Human		Aam01262 Ra12-P501	Aau69907 Human pro	Abu71798 Prostate	Abb95367 Ra12-P501	Abr54479 Prostate	Adb14302 Human pro	Aaw85068 Protein e	Aab29268 Human pro
AAM50662	ABR54583	ADB14479	AAM01230	AAU69875	ABU71766	ABB95335	ABR54447	ADB14158	AAE01362	ABG64105	ADA57289	AAM01262	AAU69907	ABU71798	ABB95367	ABR54479	ADB14302	AAW85068	AAB29268
Ŋ	ø	7	4	4	4	ហ	ø	7	4	Ŋ	9	4	4	4	ហ	ω	7	(7)	m
530	305	305	371	371	371	371	371	371	371	371	371	400	400	400	400	400	400	255	255
58.6	53.0	53.0	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.1	49.1	49.1	49.1	49.1	49.1	45.0	45.0
1677.5	1517	1517	1417.5	1417.5	1417.5	1417.5	1417.5	1417.5	1416	1416	1416	1403.5	1403.5	1403.5	1403.5	1403.5	1403.5	1287	1287
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

RESULT 1

This sequence is encoded by a human prostate tumour specific gene, and can be used in the method of the invention. The method is for detecting prostate cancer comprises contacting a biological sample with an agent able to bind an immunogenic portion of a prostate protein (such as this protein sequence). An antibody which binds to an immunogenic portion of the prostate protein, and the method can be used to detect, monitor the prostate protein of, or treat prostate cancers. The antibody may also be conjugated to a therapeutic agent for use in therapy of prostate cancers. (Updated on 25-MAR-2003 to correct PR field.) Novel human prostate specific tumour protein and fragments - useful for detecting and treating prostate cancers. Prostate tumour specific gene; human; prostate cancer; detection; Prostate tumour specific gene clone L1-12 protein. Example 1; Page 87-89; 141pp; English. AAW69385 standard; protein; 553 AA. 97US-00806596. 97US-00904809. 98US-00020747. 98WO-US003690, (revised)
(first entry) WPI; 1998-480805/41. N-PSDB; AAV58586. (CORI-) CORIXA CORP. Dillon DC; Homo sapiens WO9837418-A2 25-FEB-1997; 01-AUG-1997; 25-FEB-1998; 25-MAR-2003 08-DEC-1998 09-FEB-1998; 27-AUG-1998 AAW69385; therapy. Χu J, AAW69385 ö

Gaps

9 9

g

d

\$ B \$

g ò

```
The present sequence is an immunogenic portion of a prostate tumour protein. The immunogen, or the DNA encoding it, can be used as a vaccine for the treatment of prostate cancer. The immunogen was isolated from a prostate tumour cDNA library obtained by subtracting a prostate tumour cDNA expression library with a normal tissue cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCPCRARLAFRNIGALLPRIHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                    ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                 BLALLILGYGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLFPA
                                                                                                                                                                                                                                                                                                                                                                                                                     IDWDTSALAPYLGTQBECLFGLTLIFLTCVAATLLVAEBAALGPTBPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                    YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ASSEDSLMTSFLPGPKPGAPPPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                   1 MVQRLWVSRLLRHRKAQLLLVNILTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                       MYORLWYSRILKHRKAQLILVNLLTFGLBVCLAAGITYVPPLLLEVGVBEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                      PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                         proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human immunogenic prostate tumour protein sequence SEQ ID NO:113.
                                                                                                                                                                                                                                           .,
                                                                                                                                                                                                                     553;
                                                        comprising immunogenic portions of prostate for the treatment of prostate cancer.
                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                   100.0%; Score 2861; DB 2;
100.0%; Pred. No. 2e-271;
ive 0; Mismatches 0;
                                                                                              Example 1; Page 82-84; 130pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                     Query Match 100.
Best Local Similarity 100.
Matches 553; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VVFDKSDLAKYSA
                       WPI; 1998-609886/51.
N-PSDB; AAV61201.
Dillon DC;
                                                                                                                                                                                               Sequence 553 AA;
                                                            Polypeptides
in a vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13-JUN-2000
                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAY82002
                                                                                                                                                                                                                                                                                               н
                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY82002
Χu J,
                                                                          пd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY82002
ID AAY8
XX AAY8
AC AAY8
XX I3-J
XX XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                              8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                \delta
                                                 ..
0
                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                       120
                                                                                                                                                120
                                                                                                                                                                                                180
                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                               9
                                                                                       ELALLIGUGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYFMISLGGCLGYLLPA
                                                                                                                                                                                                                        IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                     IDWDTSALAPYIGTQEBCLFGLITLIFLTCVAATLLVABEAALGPTEPABGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                         YQGVPRABPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                          YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                       AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                        AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                         PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                         ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                          CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                         ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                         1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                 Gaps
                                                ..
                          553;
                          Length
                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             vaccine; immunogen; clone.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Amino acid encoded by prostate tumour clone L1-12.
                          DB 2;
                          'Match 100.0%; Score 2861; DB 2; Local Similarity 100.0%; Pred. No. 2e-271; les 553; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ġ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW71869 standard; protein; 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97US-00806099.
97US-00904804.
98US-00020956.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98WO-US003492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tamont;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cancer;
   Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (CORI-) CORIXA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25-FEB-1997;
01-AUG-1997;
09-FEB-1998;
   Sequence 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9837093-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Prostate;
                                                                                                                                                  61
                                                                                                                                                                                                  121
                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                            Query Match
                                                                                                                                                                          121
                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW71869
```

8 8

장염

& 8

8 & 8

240 240

180

300 300

180

120 120

540 540

```
The present sequence is encoded by a cDNA sequence which was isolated from a breast tumour cDNA library. It is provided in a specification relating to compounds for immunotherapy and diagnosis of breast cancer. Breast tumour antigens and the polymuoleotides that encode them may be used in the production of a pharmaceutical composition to be used in the treatment of breast cancer. Proliferated T cells and incubated antigen presenting cells are also required. The polypeptides and polymucleotides may also be used to produce a vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cancer;
                                                                                                                                                                                             RVVPGRGICLDLAILDSAFLLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKKFMTWVLGIG
                                              APPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                     ASSEDSLMISFLPGPKPGAFFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                     RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                      AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                            ASSEDSLMTSFLPGPKPGAPPPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            comprising an immunogenic portion of a in the detection and treatment of breast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; breast tumour antigen; cytostatic; immunotherapy; breast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein encoded by human breast tumour cDNA clone P501S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
100.0%; Score 2861; DB 3;
Best Local Similarity 100.0%; Pred. No. 2e-271;
Aatches 553; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                     Ä.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Page 92-93; 95pp; English.
                                                                                                                                                                                                                                                                                                                                                                                   AAB28527 standard; protein; 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A novel isolated polypeptide
breast cancer protein useful
cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-APR-2000; 2000WO-US009688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Xu J, Dillon DC;
                                                                                                                                                                                                                                                VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                VVFDKSDLAKYSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-638568/61.
N-PSDB; AAC79473.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 553 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200061756-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-APR-1999;
02-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            07-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19-OCT-2000.
                      361
                                                        361
                                                                                                                                   421
                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                       AAB28527;
                                                                                                                                                                       481
                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 2;
                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Reed SG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            vaccine.
                                                                                                                                                                                                                                                                                                                                             RESULT 4
                                                                                                                                                                                                                                                                                                                                                                 AAB28527
                                                g
                                                                                          à
                                                                                                                         Ob
                                                                                                                                                                     ò
                                                                                                                                                                                                       g
                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present invention describes isolated polypeptides, comprising an immunogenic portion of a prostate tumour protein (PTP). The polypeptides and polymucleotides encoding them have cytostatic activity and can be used in vaccines and in gene therapy. The polypeptides and polymucleotides encoding them, antigen presenting cells which express the polypeptides, antibodies against the polypeptides and vaccines comprising them can be used for inhibiting the development of prostate cancer in a patient. The polypeptides can be used to generate antibodies or antibodies for passive immuno therapy. A portion of the polypucleucides encoding the polypeptides can be used as a probe or to modulate the expression of the polypeptides. AAA06241 to AAA06691 and AAX82000 to AAX82020 represent sequences used in the exemplification of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YQGVPRABPGTBARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WVQRLWVSRLIRHRKAQLILVNLITFGLEVCLAAGITYVPPLLLEVGVEBKFWTWVLGIG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PVL/GLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVABEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MVORLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BLALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCPCRARLAFRNLGALLPRIHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
diagnosis; tumour; gene therapy; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New polypeptide useful for treating and diagnosing prostate comprises an immunogenic portion of prostate tumor protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                   Mitcham JL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 2861; DB 3;
Pred. No. 2e-271;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                   Xu J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 3; Page 138-139; 263pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                   Yugiu J,
                  immunogenic; cytostatic; vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ..
                                                                                                                                                                                                     98US-00115453.
98US-00116134.
98US-00159812.
99US-00232149.
99US-00232189.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                     99WO-US015838
                                                                                                                                                                                                                                                                                                                                                                                                 Harlocker SL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the present invention
                                                                                                                                                                                                                                                                                                                                                             CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-171268/15.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
Matches 553; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 553 AA;
                                                                                                                                                                                                                                                                                                                                                             CORIXA
                                                                                          WO200004149-A2
                                                                                                                                                                                                                                                                                15-JAN-1999;
15-JAN-1999;
09-APR-1999;
                                                        Homo sapiens
                                                                                                                                                                                                                            14-JUL-1998;
23-SEP-1998;
23-SEP-1998;
                                                                                                                                                                     14-JUL-1999;
                                                                                                                               27-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                   ,
DG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                             (CORI-)
                                                                                                                                                                                                                                                                                                                                                                                                 Dillon
```

g ò g à d à d ò 임 8

ö

2 d d d

40 Q

Š ရ

6 B 6

g

à

8 6 6 6 6 6 6 6

```
The present invention relates to a new polypeptide comprising an immunogenic portion of a prostate protein. The invention is useful for inhibiting the development of prostate cancer in a patient. The invention is also useful as markers for diagnosing prostate cancer and for monitoring diseases progression in patients. The present amino acid sequence represents a human prostate tumour protein
                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                   09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ASSEDSLMISFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTBA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481 RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                               IDWDTSALAPYLGTQEBCLFGLLTLIFLTCVAATLLVAEEAALGPTEPABGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                YQGVPRABPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421 ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                        PVLGLVCVPLLGSASDHWRGRYGRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                          ELALLILGYGLLDFCGOVCFTPLEALLSDLFRDPDHCROAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                         1 MYQRLWYSRLIRHRKAQLLLVNLLTFGLEYCLAAGITYVPPLLLEVGYEEKFMTMVLGIG
                                                                                                                                                                                                                                                                     MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                         CCPCRARLAFRNLGALLPRIHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                             .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human, prostate cancer, prostate-specific, diagnosis, vaccine, cytostatic, gene therapy, metastasis.
                                                                                                                                                                                   553;
immunogenic portion of prostate tumor protein
                                                                                                                                                                                   Length
                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human prostate-specific amino acid sequence L1-12
                                                                                                                                                                                 100.0%; Score 2861; DB 3;
100.0%; Pred. No. 2e-271;
ive 0; Mismatches 0;
                           59-61; 101pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAM01117 standard; protein; 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                              Ouery Match
Best Local Similarity 100.
Marches 553; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VVFDKSDLAKYSA
                            Page
                                                                                                                                                         Seguence 553 AA;
 an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-OCT-2001
                            Example 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAM01117;
                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAM0113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      X S X Z Z X E X E X S X S X
 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                          연
                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                          임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                             480
                                            120
                                                                       180
                                                                                                  180
                                                                                                                               240
                                                                                                                                                         240
                                                                                                                                                                                      300
                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                    ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                      CCPCRARLAFRNLGALLDRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                               AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                PVLGLVCVPLLGSASDHWRGRYGRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                              BLALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                         IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                              YQGVPRABPGTBARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                     AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                             ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                       ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                     RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                              IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                       CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New polypeptide useful for treating and diagnosing prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; immunogenic; prostate protein; prostate tumour prostate cancer; cytostatic; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human prostate tumour protein partial sequence #3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ä.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97US-00806099.
97US-00904804.
98US-00020956.
98US-00030607.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-00115453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABG94411 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-171268/15.
N-PSDB; AB$21254.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            XU J.
DILLON D C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     {u J, Dillon DC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US2002090372-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-AUG-1997;
09-FEB-1998;
25-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25-FEB-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABG94411;
                                                                                                                                                            181
                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                 361
                  19
                                             61
                                                                        121
                                                                                                    121
                                                                                                                               181
                                                                                                                                                                                         241
                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (XCCX)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (DITTY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABG9441
```

```
polypoptides, fusion proteins of the polypoptides, antibodies raised antigen-presenting cells expressing the polypoptides raised antigen-presenting cells expressing the polypoptides. The antibodies are useful for detecting the presence of cancer, especially prostate cancer. The polypoptides, polymucleotides and the antigen-presenting cells are useful for stimulating and/or expanding T cells specific for a tumour protein, and for inhibiting the development of cancer especially prostate useful for stimulating an immune response, and for treating cancer. The oligonucleotide is useful for detecting cancer. The prostate specific polypoptide of the invention
                                                                                                       540
                                                     540
  421 ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human prostate-specific polypeptides and polynucleotides useful for diagnosis and treatment of cancer, especially prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cancer; cytostatic; immunostimulant; tumour; immunogen.
                                                                                 The invention relates to isolated prostate-specific polynucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kalos MD;
Carter D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4; Length 553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Harlocker SL, Jiang Y,
A, Day CH, Vedvick TS,
spler WT, Henderson RA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ВВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 2861;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dillon DC, Mitcham JL, Harlocker
GR, Retter MW, Stolk JA, Day CH,
Wang A, Skeiky YAW, Hepler WT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human prostate cDNA encoded protein #3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 2; Page 269-270; 579pp; English.
                                                                                                                                                                                                                                                                                                                                                   Ź
                                                                                                                                                                                                                                                                                                                                                 AAU69763 standard; protein; 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-JUN-2000; 2000US-00605783.
09-AUG-2000; 2000US-00636215.
29-AUG-2000; 2000US-00657236.
06-SEP-2000; 2000US-00657279.
02-OCT-2000; 2000US-00678426.
10-OCT-2000; 2000US-00678166.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000US-00568100.
2000US-00570737.
2000US-00593793.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27-MAR-2001; 2001WO-US009919
                                                                                                                                                             VVFDKSDLAKYSA 553
                                                                                                                                                                                                    VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-639232/73.
N-PSDB; AAS63557.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (CORI-) CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200173032-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-OCT-2001
                                                                                                       481
                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                                   AAU69763;
                                                     481
                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fanger
Li SX,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Xu J,
                                                                                                                                                                                                                                                                                        AAU69763
AAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New
                                                                                               g
                                               ઠ
                                                                                                                                                          8
                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present invention describes polynuclectide sequences (I) which encode prostate-specific proteins (II). (I) and (II) have cytostatic activity, and can be used in vaccine production and gene therapy. (I), (II), antibodies to (II), fusion proteins comprising (II), and isolated T cells prepared using (I) or (II) are used treat cancer in a patient. (I) and the antibodies are also used in the detection of cancer in a patient. The cancer that is diagnosed or treated is particularly prostate cancer. (I) and (II) can be used in vaccines. The antibodies or (I) can be used for monitoring the progression of cancer in a patient. (I) and (II) can also be used to improve diagnostic and therapeutic methods for prostate cancer. They can indicate the level of metastasis as well as the prostate volume. AAH93357 to AAH933944 and AAMOIIIS to AAMOI318 represent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                          for diagnosing, for use in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MVQRLWVSRLIRHRKAQLLLVNLIFFGLEVCLAAGITYVPPLLIEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLI PRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BLALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 IDWDTSALAPYLGTQEECLFGILTLIFLTCVAATLLVAEBAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCPCRARLAFRILGALLPRIHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YQGVPRAEPGTEARRHYDEGVRAGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ASSEDSLMTSFLPGPKPGAPPPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTBA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PVLGLVCVPLLGSASDHWRGRYGRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEBKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                                                               Y, Reed (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 553;
                                                                                                                                                                                                                                                                                                                                                                                                                       New polynucleotide encoding a prostate-specific protein, monitoring and treating prostate cancer in a patient and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                  SL, Jiang N
Stolk JA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 2861; DB 4;
100.0%; Pred. No. 2e-271;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                  Harlocker S
Retter MW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 2; Page 267-268; 543pp; English.
                                                                                                                                                                                                                                                               ξĔ
                                                                                                       16-JAN-2001; 2001WO-US001574
                                                                                                                                                       14-JAN-2000; 2000US-00483672
                                                                                                                                                                                                                                                               Mitcham GR, Day (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 100.
Matches 553; Conservative
                                                                                                                                                                                                                                                          Xu J, Dillon DC, Mit.
Kalos MD, Fanger GR,
Wang A, Meagher MJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     present invention
                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-425873/45.
                                                                                                                                                                                                          (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 553 AA;
WO200151633-A2.
                                                  19-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               vaccines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        he
```

ઠે g ò g à g ò g ठे g ò 셤 ò g ò

```
AAG99002 standard; protein; 553 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WFDKSDLAKYSA
                                                                                                                                                                   Sequence 553 AA;
                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAG99002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 9
AAG99002
ID AAG9
XX
AC AAG9
요
                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                  \dot{\delta}
                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                  \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                    \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                                                                                                                                 \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                    \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
         ö
                                                                                         180
                                                                                                                                                                                           360
                                                         120
                                                                         120
                                                                                                          180
                                                                                                                          240
                                                                                                                                          240
                                                                                                                                                           300
                                                                                                                                                                           300
                                                                                                                                                                                                          360
                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                             540
                         9
                                        9
                                   MYQRLWYSRLLRHRKAQLILVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMYLGIG
                                                                    IDMDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                     YOGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                        YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                       ASSEDSLMISFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVGEPTEA
                                                                                                                                                                                                                                                                                                       MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                          PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                          ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                          ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                          IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEBAALGPTEPAEGLSAPSLSPH
                                                                                                                                                           CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                            APPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                           AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                            RVVPGRGICLDLAILDSAPLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                            ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                      tumour antigen; prostate tumour; therapy; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Prostate tumour antigen predicted amino acid sequence for L1-12.
          ..
0
          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                               prostate cancer; immunogenic; cytostatic; vaccine.
100.0%; Pred. No. 2e-271; ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cheever MA;
                                                                                                                                                                                                                                                                                                                                                                                      AAB74800 standard; protein; 553 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ku J, Skeiky YAW, Reed SG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                04-OCT-2000; 2000WO-US027464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0157455P
                                                                                                                                                                                                                                                                                                                                              553
                                                                                                                                                                                                                                                                                                                              VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry
          553; Conservative
                                                                                                                                                                                                                                                                                                                                         VVFDKSDLAKYSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2001-245062/25.
N-PSDB; AAH02530.
 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                        prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200125272-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 04-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12-APR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                       14-JUN-2001
                                                                                                           121
                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                             541
Best Local Matches 55:
                                                          61
                                                                          61
                                                                                           121
                                                                                                                            181
                                                                                                                                           181
                                                                                                                                                           241
                                                                                                                                                                            241
                                                                                                                                                                                            301
                                                                                                                                                                                                            301
                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                       AAB74800
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human;
                                                                                                                                                                                                                                                                                                                                                                              원
장
원
                                                                                                                                                                                                                                                                                                                           ठे
                                     D
                                                        ò
                                                                     8 B
                                                                                                                                                                                        8 B 8
                                                                                                                                                                                                                                                                                        장염
                                                                                                                                                                                                                                                                                                                                        음
```

```
least an immunogenic portion of a prostate tumour antigen protein or its variant. (I) have cytostatic activity and can be used in vaccine production. (I), prostate tumour antigen polynucleotides, an antigen production. (I), prostate tumour antigen polynucleotides, an antigen pharmaceutical (APC e.g. a dendritic cell) that expresses (I), and a pharmaceutical composition containing (I) are useful for inhibiting the development of cancer in a patient. Antibodies specific for prostate specific protein are useful for detecting the that encodes a prostate specific protein are useful for detecting the presence or absence of a cancer or monitoring the progression the progression of a cancer, especially prostate cancer. AAH02422 to AAH2872, AAB74798 to AAB74821 invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                   The present invention describes an isolated polypeptide (I) comprising
for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELALLILGYGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAXSVYAFMISLGGCLGYLLFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDWDISALAPYLGTQEBCLFGLLTLIFLTCVAATLLVAEBAALGPTEPAEGLSAPSTLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YQGVPRAEPGTEARHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ASSEDSIMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCPCRARLA FRNLGALL PRLHQLCCRMPRTLRRL FVABLCSWMALMTFTL FYTD FVGBGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
Prostate specific protein and its encoding polynucleotide, useful treatment and diagnosis of prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ouery Match 100.0%; Score 2861; DB 4; Best Local Similarity 100.0%; Pred. No. 2e-271; Matches 553; Conservative 0; Mismatches 0;
                                                                                     Claim 3; Page 157-158; 276pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              553
```

us-09-593-793a-113.rag

-

480 540 540

420 420 480

```
301 YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from the Wilm's tumour protein WTI and methods for their use in treating manignant diseases. Peptides derived from both the murina and human WTI proteins are provided. The human WTI gene is found on chromosome 11913, and the protein was shown to be a zinc finger transcription factor. The immunogenic peptides of the invention are particularly useful in the diagnosis and treatment of cancer and leukaemia. The present sequence is a polypeptide described in the exemplification of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human, mouse, immunotherapy, cancer, leukaemia, WT1, Wilm's tumour gene, chromosome 11p13; zinc finger transcription factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        present invention describes compositions comprising peptides derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Polypeptide comprising part of the Wilms Tumor gene product sequence is used in the diagnosis and treatment of malignant diseases e.g. leukemia
                                                                                                                            ASSEDSLMISFLPGPKPGAPFPNGHVGAGGSGLLPPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                 RVVPGRGICLDLAILDSAFILSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MVQRLWVSRLLERHKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFWTMVLGIG
                                                             AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                          RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                     AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                       ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 2861; DB 4; Length 553; 100.0%; Pred. No. 2e-271; ive 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human P501S inventive antigen SEQ ID NO: 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Page 212-213; 228pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Reed
                                                                                                                                                                                                                                                                                                                                                                        Ą
                                                                                                                                                                                                                                                                                                                                                                        standard; protein; 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and cancer associated with WII.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       04-OCT-2000; 2000WO-US027465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0157459P
                                                                                                                                                                                                                                               VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                              VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 100.
Matches 553; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2001-328324/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (CORI-) CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Xu J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 553 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200125273-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                          06-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Skeiky YAW,
                                                                                                                                                                                                                                                                                                                                                                                                         AAG62150;
                                                                    361
                                                                                                                                       421
                                                                                                                                                                          481
                                                                                                                                                                                                            481
                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                      AAG62150
                                     361
                                                                                                       421
                                                                                                                                                                                                                                                                                                                                    RESULT 10
                                                                                                                                                                                                                                                                                                                                                       AAG62150
                                                                                                                                                                                                                                                                                                                                                                        à
                                                             d
                                                                                                    à
                                                                                                                                   g
                                                                                                                                                                       à
                                                                                                                                                                                                        염
                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   o;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present invention describes an isolated polypeptide (PI) comprising at least an immunogenic portion of a prostate-specific protein, or its variant. Also described are polynucleotides (NI) encoding (PI). (PI) and (NI) have cytostatic activity and can be used in vaccine production. The polypeptides, nucleic acids and antibodies from the present invention are useful in the diagnosis and therapy of prostate cancer. Prostate specific genes P704P, P774P, P775P and 8305D are located in a genomic region on chromosome 22q11.2 known as the Cat Eye Syndrome region. Prostate specific antigen (PSA) P501S was located on chromosome 1. AAH884671 to AAH88143 and AAG99070 represent polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WYQRLWYSRLIRHRKAQLILIVNLLTFGLEVCLAAGITYVPPLILEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IDWDTSALAPYLGTQEECLFGLETLIFLTCVAATLLVABEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCPCRARLAFRNLGALLPRIHOLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PVLGLVCVPLLGSASDHWRGRYGRRPFIWALSLGILLSLFLIFRAGHLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Isolated polypeptide comprising at least an immunogenic portion of prostate-specific protein, useful in the diagnosis and therapy of prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                             Human; prostate cancer; therapy; diagnosis; cat eye syndrome; chromosome 22q11.2; prostate-specific protein; chromosome 1; prostate specific antigen; PSA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                     Human prostate-specific amino acid sequence L1-12/P501S
                                                                                                                                                                                                                                                                                                                                                                    Harlocker SL, Jiang Y,
Day CH, Skeiky YAW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%; Score 2861; DB 4;
ilarity 100.0%; Pred. No. 2e-271;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 3; Page 167-168; 325pp; English
                                                                                                                                                                                                                                                                                                                                                                    Mitcham JL, F
fW, Stolk JA,
                                                                                                                                                                                                                                               09-NOV-2000; 2000WO-US030904
                                                                                                                                                                                                                                                                              99US-00439313
99US-00443686
(first entry)
                                                                                                                                                                                                                                                                                                                                                                    Xu J, Dillon DC, Mito
Kalos MD, Retter MW,
                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2001-308785/32.
                                                                                                                                                                                                                                                                                                                                  (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 553; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 553 AA;
                                                                                                                                                                          WO200134802-A2.
                                                                                                                                                                                                                                                                              12-NOV-1999;
                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                               18-NOV-1999;
 25-SEP-2001
                                                                                                                                                                                                          17-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
```

ò 임 ò 셤 ò S ò g ò g

9 9

Gaps

·,

```
The invention describes a fusion protein comprising at least one amino acid sequence of immunogenic portions of any of the 3 sequences not defined in the specification, or sequences having at least 70 or 90 % sequence identity to any one of the 35 sequences defined in the USPTO web site, which is encoded by any of the 4 nucleotide sequences not defined in the specification. The fusion protein, composition and methods are useful for diagnosing, preventing and/or treating cancer, particularly prostate cancer. The proteins are useful as markers to indicate the presence or absence of cancer. This is the amino acid sequence of a prostate cancer specific antigen. Note: The sequence date for this patent did not form part of the printed specification, but was obtained in electronic format directly from the US patent office at sequence.html?DocID=US20020192763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361 AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                      Prostate specific protein and its encoding polynucleotide, useful for treatment and diagnosis of prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MYQRLWYSRLLRHRKAQLLLVNLITFGLEVCLAAGITYVPPLLLEVGVEEKFWTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ELALLIGUGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IDWDTSALAPYLGTQEECLFGLLTLFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCPCRARLAFRNLGALLPRIHQLCCRMPRILRRLFVABLCSWMALMTFILFYTDFVGBGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WORLWVSRLIRHRKAOLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTWVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PVLGLVCVPLLGSASDHWRGRYGRRPFIWALSLGILLSLFLIPRAGMLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLIVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCPCRARLAFRNLGALLPRIHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Gaps
                                                                                                                                                                         Kalos MD;
Carter D;
Hural J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ch 100.0%; Score 2861; DB 4; Length 553; 11 Similarity 100.0%; Pred. No. 2e-271; 553; Conservative 0; Mismatches 0; Indels 0;
                                                                                                                                                                        Xu J, Dillon DC, Mitcham JL, Harlocker SL, Jiang Y, Fanger GR, Retter MW, Stolk JA, Day CH, Vedvick TS, Li SX, Wang A, Skeiky XAW, Hepler WT, Henderson RA, Monsill PD, Houghton RL, Y De BassolsCV, Foy TW;
                                                                                                                                                                                                                                                                                                               Example 1; Fig 9; 85pp; English.
                                                                                                                                    Ω
.
                                                                          HENDERSON R A. HURAL J. MCNEILL P D.
                                                                                                                    HOUGHTON R L.
Y DE BASSOLS C
FOY T M.
                                                SKEIKY Y A W. HEPLER W T.
  s
S
                                                                                                                                                                                                                                               WPI; 2001-245062/25
 VEDVICK T
               ο.
                           LI S X.
WANG A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 553 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Si
Matches 553,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
(VedV/)
(CART/)
(LISX/)
(WANG/)
(SKEI/)
(HEPL/)
(HEND/)
(HURA/)
(HOURA/)
(HOUS/)
(HOUS/)
(HOUS/)
(HOUS/)
  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                      480
                                                      180
                                                                   240
                                                                                                                                    240
                                                                                                                                                                                        300
                                                                                                                                                                                                                   YQGVPRAEPGTBARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                  RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                                                                 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                               CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL 300
                 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDFRPL
                                                      ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                          IDWDISALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEBAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                              YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                  AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                           IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                        AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                              ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                   ASSEDSIMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Prostate cancer, vaccine, gene therapy, cytostatic, fusion protein, immunogen, cancer, prostate specific antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Prostate cancer specific antigen P501S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ŗ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein; 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-OCT-1999; 99US-0157455P.
04-OCT-2000; 2000US-00679272.
28-MAR-2001; 2001US-00822827.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-JUN-2001; 2001US-00895793
                                                                                                                                                                                                                                                                                                                                                                                                                                     VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                           VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DILLON D C.
MITCHAM J L.
HARLOCKER S L.
JIANG Y.
KALOS M D.
FANGER G R.
RETTER M W.
STOLK J A.
DAY C H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US2002192763-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19-DEC-2002,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABU71653;
                                                      121
                                                                               121
                                                                                                          181
                                                                                                                                    181
                                                                                                                                                               241
                                                                                                                                                                                         241
                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABU71653
                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (DILL/)
(MITC/)
(HARL/)
(JIAN/)
(KALO/)
(FANG/)
(RETT/)
(STOL/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (/ccnx)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABU71653
                     qq
                                                     P &
                                                                                                 ₹
                                                                                                                           g
                                                                                                                                                  ₹
                                                                                                                                                                              8 & 8
                                                                                                                                                                                                                                                             6666
                                                                                                                                                                                                                                                                                                                                                                                                    台
                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
```

	Db 361 APPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYKGDTGG 420 Qy 421 ASSEDSLMTSFLPGPKPGAPFDNGHVGAGGSGLLPPBPALCGASACDVSVRVVVGEPTEA 480	541 541 SULT 13 U10324 AAU10324	AC AAU10324; XX XX DT 14-FEB-2002 (first entry) XX XX DE Human PROST 03. XX	EN W0200181577-A2. XX ED 01-NOV-2001. XX E 26-APR-2001; 2001WO-US013123. XX E 27-APR-2000; 2000US-0200065P. FR 20-APR-2001; 2001US-00838785. XX E A (SCHD) SCHERING AG. XX E A (SCHD) SCHERING AG. XX E D (SCHD) SCHERING AG.	20 20 30B; 31 P 31 P 31 P 31 P 31 P 31 P 31 P 31 P
OY 421 ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480	RESULT 12 AAU04961 ID AAU04961 standard; protein; 553 AA. XX AC AAU04961; XX XX XX XX XX AC AAU04961; XX	Human, Homo a US6262 17-JUI	25-FEB-1998; 25-FEB-1997; 01-AUG-1997; 09-FEB-1998; (CORI-) CORIXA Xu J, Dillon D WPI; 2001-44086 N-PSDB: AAS1010	XX Novel polymucleotide encoding polypeptide comprising a portion of PT prostate tumor protein useful for inhibiting development of prostate PT cancer or for treating prostate cancer in a patient. XX XX CC The sequence is a partial prostate tumour protein, encoded by a prostate CC tumour specific cDNA. The DNA is useful for inhibiting the development of CC prostate cancer or for treating prostate cancer in a patient XX XX CC Sequence 553 AA;	Query Match 100.0%; Score 2861; DB 4; Length 553; Best Local Similarity 100.0%; Pred. No. 2e-271; Indels 0; Gaps 0; Qy 1 MVQRLWVSRLIRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTWVLGIG 60 Db 1 MVQRLWVSRLIRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTWVLGIG 60 Qy 61 PVLGIVCVPLLGSASDHWRGRYGRRRPPIWALSLGILLSLF1LPRAGWLAGLLCPDPRPL 120 Db 61 PVLGIVCVPLLGSASDHWRGRYGRRRPPIWALSLGILLSLF1LPRAGWLAGLLCPDPRPL 120 Cy 121 ELALLIGGGLLPFGAQVCFTPLEALSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180 Db 121 ELALLIGGGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180 Qy 181 IDWDTSALAPYLGTQEBCLFGLILLFFLTCVAATLLVABEAALGPTEPAEGLSAPSLSPH 240

Wed Aug 25 09:04:22 2004

88888888888888888

ABB95222

541

à

481

```
Query Match 100.0%; Score 2861; DB 5; Length Best Local Similarity 100.0%; Pred. No. 2e-271; Matches 553; Conservative 0; Mismatches 0; Indels
                                                                                                             Human; cancer; prostate cancer; vaccine; cytostatic; immunostimulant;
                                                                                  Human L1-12 protein SEQ ID NO 113.
                                                      (first entry)
                                                                                                                                                       Homo sapiens
                                                      19-JUL-2002
                                                                                                                           gene therapy
                            ABB95222;
```

```
The present invention provides prostate-specific coding sequences and their encoded proteins. These can be used in the diagnosis and treatment of cancers, particularly prostate cancer. The present sequence is a protein described in the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New prostate-specific polynucleotides for diagnosing and treatir
diseases, in particular prostate cancer, and as markers for the
progression of cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dillon DC, Mitcham JL, Harlocker SL, Jiang Y, GR, Retter MW, Stolk JA, Day CH, Vedvick TS, Wang A, Skeiky YAW, Hepler WT, Henderson RA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 2; SEQ ID NO 113; 87pp; English.
                                                                                                                                                                                                                                                                                            14-JAN-2000; 2000US-00483672.
27-MAX-2000; 2000US-00586100.
12-MAY-2000; 2000US-00568100.
13-JUN-2000; 2000US-00593793.
27-JUN-2000; 2000US-00693793.
27-JUN-2000; 2000US-00653125.
29-AUG-2000; 2000US-00651236.
66-SEP-2000; 2000US-00651236.
02-OCT-2000; 2000US-0069366.
                                                                                                                              2001US-00759143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LISX.
WANG A.
SKEIKY Y A W.
HEPLER W T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HENDERSON R A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              XU J.
DILLON D C.
MITCHAM J L.
HARLOCKER S I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STOLK J A.
DAY C H.
VEDVICK T S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-255649/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FANGER G R.
RETTER M W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KALOS M D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARTER D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 553 AA;
                    US200202248-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JIANG Y.
                                                                                                                                                                                                                            09-APR-1999;
13-JUL-1999;
12-NOV-1999;
18-NOV-1999;
                                                                                    12-JAN-2001;
                                                                                                                                                                                 14-JUL-1998;
23-SEP-1998;
                                                                                                                                                                                                                    15-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (XUJJ/)
(DILL/)
(MITC/)
(HARL/)
(JIAN/)
(FALO/)
(FALO/)
(RATT/)
(STOL/)
(STOL/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (CART/)
(LISX/)
(WANG/)
(SKEI/)
(HEPL/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fanger (
Li SX,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ku J,
     such as prostate cancers. (I) is also useful for generating antibodies to PROST 03. (III) is useful in detecting the levels of PROST 03 polypeptides in cells and tissues, and in targeting drugs to primary and metastatic tumours. (I) is also useful for stimulating immune response to PROST 03 containing cells. (II) is useful in diagnostic assays for detecting the levels of polymulacotides encoding PROST 03 in cells and tissues. (II) is useful as DNA probes, as targets for antisense and ribozyme therapy, and as templates for the production of antisense polymulacotides. (I) and (II) are useful in research, biological, clinical and therapeutic purposes. The present sequence represents the amino acid sequence of human PROST 03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                 ELALLIGVGILDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CPCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVABLCSWWALMTFTLFYTDFVGEGL 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                                PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 ELALLILGVGELDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG 60
                                                                                                                                                                                                                                                                                                                               1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RVVPGRGICLDLAILDSAFILLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVABEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ASSEDSIMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                  553;
                                                                                                                                                                                                                              100.0%; Score 2861; DB 5; Length
100.0%; Pred. No. 2e-271;
ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ą.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABB95222 standard; protein; 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541 WFDKSDLAKYSA 553
                                                                                                                                                                                                                           Query Match
Best Local Similarity 100.
Matches 553, Conservative
                                                                                                                                                                                                 Sequence 553 AA;
```

61

g ò В δ

121

181 241

181

301 301 361 361

8 6 A

241

8 8 8

421 481

421

 δ g ò q 1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFWTMVLGIG

Gaps

.,

Length 553;

Kalos MD; Carter D; Carter

Aug

Wed

Page 144-145; 150pp; English

```
polypeptides. The sequences are useful for treating cancer, preferably breast cancer, in a patient or for stimulating an immune response. The polymucleotides and polypeptides are also useful in the diagnosis and monitoring of breast cancer. A method for detecting the presence of a cancer in a patient, comprises obtaining a biological sample from the patient, contacting the biological sample with a binding agent that binds to a breast tumour polypeptide, detecting in the sample an amount of polypeptide to a predetermined cut-off value, therefore determining the presence of a cancer in the patient. Sequences AAU82641-AAU82655 represent human breast tumour polypeptides of the invention
                                  invention relates to polynucleotides encoding breast tumour
                                                                                                                                                                                                  Sequence 553 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Search co
ò
                                                                                                                                                                                                                                                                                                D,
                                                                                                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                180
                                                                                                                                                                          300
                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                540
9
                                                                                                                                                                                                                                                                                                                                                                                               RVVPGRGICLDLAILDSAFILSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                         YQGUPRAEPGTEARRHYDEGURMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                RVVPGRGICLDLAILDSAFILSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                           PVIGLVCVPLLGSASDHWRGRYGRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                       ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                        IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                          IDMDTSALAPYLGTQEECLFGLTLIFLTCVAATLLVAEBAALGPTBPAEGLSAPSLSPH
                                                                                                                                                                                                  CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                               AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                               ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                              ASSEDSLMISFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                        ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                            CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                            YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                              AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Polynucleotides encoding breast tumor polypeptides, useful
breast cancer or stimulating an immune response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Harlocker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tumour polypeptide; breast cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human breast tumour polypeptide clone #3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Retter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ź
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAU82643 standard; peptide; 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22-JUN-2000; 2000US-00602877.
12-OCT-2000; 2000US-00687507.
06-FEB-2001; 2001US-00778381.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12-JUN-2001; 2001WO-US019032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DC,
                                                                                                                                                                                                                                                                                                                                                                                                                                VVPDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                        VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dillon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2002-147792/19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Χu J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200198339-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-OCT-2000;
06-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                    301
                                                                                                121
                                                                                                                          181
                                                                                                                                                                            241
                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                        61
                                                61
                                                                        121
                                                                                                                                                 181
                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Reed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          β
                                                                       à
                                                                                                qq
                                                                                                                       ò
                                                                                                                                           g
                                                                                                                                                                          8
                                                                                                                                                                                             ద
                                                                                                                                                                                                                    \delta
                                                                                                                                                                                                                                             QQ
                                                                                                                                                                                                                                                                       \overset{\sim}{\sim}
                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                              \delta
                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                        8
```

```
240
                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                          120
                                                                                                                                                                                           180
                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                             120
                                                                                           9
                                                                                                                                             RVVPGRGICLDLAILDSAFILSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIXFATQ
                                                                                   MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFWTMVLGIG
                                                                                                                                                                                                                                                                                                                                        AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                              1 MVQRLMVSRLLRHRKAQLILLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEXFMTMVLGIG
                                                                                                                             PVLGLVCVPLLGSASDHWRGRYGRRFPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                          IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVABEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                            IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEBAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                         CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                        YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                           ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                Gaps
                                .;
0
100.0%; Score 2861; DB 5; Length
100.0%; Pred. No. 2e-271;
ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                02:27:08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                completed: August 25, 2004,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WYFDKSDLAKYSA 553
                 Best Local Similarity 100.
Matches 553; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VVFDKSDLAKYSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 : 175.214 secs
                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                               61
                                                                                                                                                            61
                                                                                                                                                                                            121
                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
```

This Page Blank (USD)

```
August 25, 2004, 02:24:18; Search time 162.358 Seconds (without alignments) 1070.372 Million cell updates/sec
                                                                                                                                                                                                                                        US-09-593-793A-113
2861
1 MVQRLWVSRLLRHRKAQLLL......AIYFATQVVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Published Applications AA:*

| cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
| cgn2_6/ptodata/1/pubpaa/PCT_NEW PUB.pep:*
| cgn2_6/ptodata/1/pubpaa/ISO6_NEW PUB.pep:*
| cgn2_6/ptodata/1/pubpaa/ISO6_PUBCOMB.pep:*
| cgn2_6/ptodata/1/pubpaa/USO6_PUBCOMB.pep:*
| cgn2_6/ptodata/1/pubpaa/ISO6_PUBCOMB.pep:*
| cgn2_6/ptodata/1/pubpaa/ISO8_NEW PUB.pep:*
| cgn2_6/ptodata/1/pubpaa/ISO8_NEW PUB.pep:*
| cgn2_6/ptodata/1/pubpaa/USO9_PUBCOMB.pep:*
| cgn2_6/ptodata/1/pubpaa/USO0_NEW_PUB.pep:*
| cgn2_6/ptodata/1/pubpaa/USO0_NEW_PUB.pep:*
| cgn2_6/ptodata/1/pubpaa/USO0_NEW_PUB.pep:*
| cgn2_6/ptodata/1/pubpaa/USO0_PUBCOMB.pep:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                          1295152 seqs, 314255058 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 08
Maximum Match 1008
Listing first 45 summaries
                                                                                               protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                            OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ••
                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                              Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	App	pli	App	App	App	Appl									
	101, App	, Appli	.13,	13,	13,	13,	13,	13,	13,	13,	101,	113,	113,	113,	13,
ion		N	-	3e 1	3e 1	36.1	3e 1	1	19	ce 1	ace	ace	age	ace	ace
Description	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence
Desc	Sec	Se	Sec	Sec	Sec	Se	Sec	Sec	Sec	Sec	Š	Š	മ്	ഗ്	Š
												_	_	9	
	101	Ŋ	113	113	113	113	113	113	113	113	-101	-111	-113	A-13	-13
	288-	785-	143-	-699	-909	827-	453-	-088	793-	814-	-916	-896	-940	-678	-907
	JS-09-745-288-101	JS-09-838-785-	JS-09-759-143-1	JS-09-780-669-1	JS-09-030-606-1	JS-09-822-827-J	JS-09-115-453-1	JS-09-232-880-1	JS-09-895-793-1	JS-09-895-814-1	JS-10-453-919-1	JS-10-012-896-1	-010	US-10-144-678A-	US-10-005-907-13
	-60-	-60-	-60-	-60-	-60-	-60-	-60-	-60-	-60-	-60-	8-10	S-10	S-10	S-10	S-10
a :	as	us	us	us	ns	ns	US	as	ns	as	Þ	₽	Þ	Þ	Þ
DB	ov.	σν	თ	σı	σ	თ	σ	თ	თ	თ	12	13	14	7	14
.% Query Match Length	553	553	553	553	553	553	553	553	553	553	553	553	553	553	553
ch]	0	0.	0.	0.	٥.	0.	0.	0.	٥.	0.	0.	0	0.	٥.	0.
.% Query Match	100	100	100.0	100	100	100	100	100	100	100	100	100	100	100	100
Score	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861
υ <u>)</u> 1															
Result No.	1	7	٣	4	Ŋ	φ	7	œ	σ	10	11	12	13	14	15

Sequence 113, App Sequence 548, App Sequence 102, App Sequence 113, App Sequence 113, App	Sequence 947, App Sequence 4, Appli Sequence 974, App Sequence 974, App Sequence 5, Appli	1029 1029 708,	708, 708, 708, 708,	2222 9922 9922	852, e 852, e 852, e 852, e 36,
4 US-10-294-025- 5 US-10-295-027- 5 US-10-295-027- 6 US-10-688-838- US-09-822-827-9	0 0 0 0 0	US-10-144-67 US-10-294-02 US-09-759-143 US-09-780-669	US-09F822-827-708 US-09-895-793-708 US-08-895-814-708 US-10-012-896-70 4 US-10-144-678A-7	US-10-294 US-09-833 US-09-759- US-09-780- US-09-822- US-09-895-	E 4 4 C
553 553 553 553 1079	1079 710 359 359	305 305 371 371	371 371 371 371	371 400 400 400 400	400 400 400 255
0.000.000000000000000000000000000000000	. .	00 0 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		4 4 4 4 4 4 0 0 0 0 0 0 0 7 7 1 1 1 1	
2861 2861 2861 2861 2861	2861 2601 1696 1696	151 151 151 417.	1417.5 1417.5 1417.5 1417.5 1417.5	1417.5 1416 1403.5 1403.5 1403.5	1403.5 1403.5 1403.5 1403.5 1287
16 117 118 20	44 44 44 44 44 44 44 44 44 44 44 44 44		ш ш ш ш ш 0	W W W W W 4 W W C B B B B B B B B B B B B B B B B B	4 4 4 4 4 4 0 6 4 0

ALIGNMEN

```
NS-01-145-288-101

Sequence 101, Application US/09745288

Sequence 101, Application US/09745288

Sequence 101, Application US/09745288

Sequence 101, Application US/09745288

APPLICANT: Reed, Steven G.
APPLICANT: Reed, Steven G.
APPLICANT: Dillon, Davin C.
TITLE OF INVENTION: COMPOUNDS FOR IMMUNOTHERAPY AND
TITLE OF INVENTION: DIAGNOSIS OF BREAST CANCER AND METHODS FOR THEIR USE
TITLE REFERENCE: 210121.44601

CURRENT APPLICATION NUMBER: US/09/745,288

CURRENT FILING DATE: 2000-12-19

NUMBER OF SEQ ID NOS: 101

SOFTWARE: FREESEQ for Windows Version 3.0

SEQ ID NO 101

LENGTH: 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGILCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ELALLIIGVGLLDFCGQVCFTPLEALLSDFFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MVQRLWVSRLLRHRKAQLLLVVLTFGLEVCLAAGITYVPPLLLEVGVEEKFWTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 PVLGLVCVPLLGSASDHWRGRYGRRPFIWALSLGILLSLFLIPRAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 ELALLILGVGLIDFCGQVCFTPLBALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLBVCLAAGITYVPPLLLBVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 100.0%; Score 2861; DB 9; Length 553; Best Local Similarity 100.0%; Pred. No. 3.7e-245; Matches 553; Conservative 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: PRT
; ORGANISM: Homo sapien
US-09-745-288-101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \delta
```

360

```
61 PVLGLVCVPLLGSSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                      YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                  181 IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEBAALGPTEPAEGLSAPSLSPH 240
                                                                                                                                                                                       361 AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                              361 APPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                             241 CCPCRARLAFRNLGALLPRIHQLCCRMPRILRRLFVABLCSWWALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                    CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                 ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             THE THERAPY AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Day, Craig H.

APPLICANT: Vedvick, Thomas S.
APPLICANT: Vedvick, Thomas S.
APPLICANT: Carter, Darrick
APPLICANT: Li, Samuel
APPLICANT: Wang, Aijun
APPLICANT: Wang, Aijun
APPLICANT: Hepler, William
APPLICANT: Heller Selection Solution S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tch 100.0%; Score 2861; DB 9; al Similarity 100.0%; Pred. No. 3.7e-245; 553; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 113, Application US/09759143
Patent No. US2002022248A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xu, Jiangchun
Dillon, Davin C.
Mitcham, Jennifer L.
Harlocker, Susan L.
Jiang, Yuqui
Henderson, Robert A.
Kalos, Michael D.
Fanger, Gary R.
Retter, Marc W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541 VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541 VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 3
US-09-759-143-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-759-143-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Far
SEQ ID NO 113
LENGTH: 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       쥠
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                          임
                                                                                                                                                      상
임
                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                 \delta
                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                    \delta
                                                                                                                                                                                                                                                                                                                                                                                               480
     300
                                                                                                                                                                                                                     YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                          AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG 420
                                                                                                                                                                                                                                                                                                                                           AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG 420
                                                                                                                                                                                                                                                                                                                                                                                                                             ASSEDSLMISFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 PVLGLVCVPLLGSASDHWRGRYGRRRFFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PVLGLVCVPLLGSASDHWRGRYGRRFFFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDFDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDWDTSALAPYLGTQEECLFGLITLIFLTCVAATLLVABEAALGPTEPAEGLSAPSLSPH 240
                                                                                                                                                                                       YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVABLCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                               ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                  CCPCRARLAFRNLGALL PRLHQLCCRMPRTLRRLFVABLCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Lin, Rick
APPLICANT: Parkes, Debbie
APPLICANT: Parkes, Debbie
APPLICANT: Sarry, Gordon
APPLICANT: Schneider, Douglas
APPLICANT: Steinbrecher, Renate
APPLICANT: Wu, John Heuit, Pam T
APPLICANT: Wu, John Bucoding a No. US20020009455A1e1 PROST 03
TITLE OF INVENTION: DNA Encoding a No. US20020009455A1e1 PROST 03
FILE REFERENCE: 51831AUSM1
CURRENT APPLICATION NUMBER: US/09/838,785
CURRENT FILING DATE: 2001-04-20
PRIOR APPLICATION NUMBER: 60/200,065
PRIOR APPLICATION NUMBER: 60/200,065
NUMBER OF SCO ID NOS: 26
NUMBER OF SCO ID NOS: 26
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 100.0%; Score 2861; DB 9; Best Local Similarity 100.0%; Pred. No. 3.7e-245; Matches 553; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/09838785
Patent No. US2002009455A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541 VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Lau, Ted
APPLICANT: Lin, Ric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-838-785-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-838-785-2
                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                181
                                                                                  241
                                                                                                                                      241
                                                                                                                                                                                          301
                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH:
                                                                                                                                                                                                                                                                                                                                8 & 8
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             β
                                                                                                                        DP
                                                                                                                                                                                    8
                                                                                                                                                                                                                     g &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                    ò
```

ö

9 9

```
.
   100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541 UVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541 VVPDKSDLAKYSA 553
                  Conservative
Best Local Similarity
Matches 553; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 5
US-09-030-606-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                     61
                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                   Бb
                                                                                                  ò
                                                                                                                          g
                                                                                                                                                       δ
                                                                                                                                                                                   g
                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                            300
                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                     480
                                                                                     IDMDISALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH 240
                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                 RVVPGRGICLDLAILDSAFILSQVAPSLFMGSIVQLSQSVTAXMVSAAGLGLVAIYFATQ 540
               BLALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                      YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                          361 AFPVAAGAICLSHSVAVVTASAALIGFFFSALQILPYILASLYHREKQVFLPKYRGDIGG 420
                                                                                                                                                                                                                                                                                                                                                                RVVPGRGICLDLAILDSAFILLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                               ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                      ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLDFA
                                                                                                                                                                                                               301 YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                               AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                      ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                             CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Michell, Patricia D.
APPLICANT: Michell, Raymond L.
APPLICANT: Houghton, Raymond L.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY AND TITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER FILE REFERENCE: 210121.427024
CURRENT APPLICATION NUMBER: US/09/780,669
CURRENT APPLICATION NUMBER: US/09/780,669
NUMBER OF SEQ ID NOS: 943
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 2861;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 113, Application US/09780669
Patent No. US20020051977A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xu, Jiangchun
Dillon, Davin C.
Mitcham, Jennin Er L.
Harlocker, Susan L.
Jiang, Yuqui
Henderson, Robert A.
Kalos, Michael D.
Fanger, Gary R.
Retter, Marc W.
Stolk, John A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Skeiky, Yasir A.W.
Hepler, William
Hural, John
McNeill, Patricia D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Day, Craig H.
Vedvick, Thomas S
Carter, Darrick
                                                                                                                                                                                                                                                                                                                                                                                                                      VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                              VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wang, Aijun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
ORGANISM: Homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Li, Samuel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
APPLICANT:
                                         121
                                                                     181
                                                                                                181
                                                                                                                             241
                                                                                                                                                         241
                                                                                                                                                                                      301
                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
               ò
                                       g
                                                                     ò
                                                                                               d
                                                                                                                            ò
                                                                                                                                                    g
                                                                                                                                                                                    ò
                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                      Š
```

```
APPLICANT: Xu, Jiangchun APPLICANT: Xu, Jiangchun APPLICANT: Xu, Jiangchun C TITLE APPLICANT: Dillon, Davin C. TITLE OF INVENTION: COMPOUNDS FOR IMMUNODIAGNOSIS OF PROSTATE CANCER AND METHODS I NUMBER OF SEQUENCES: 224
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181 IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGFTEPAEGLSAPSLSPH 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RVVPGRGICLDLAILDSAFILLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                    61 PVLGLVCVFLLGSASDHWRGRYGRRFFFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                     ELALLILGVGLLDFCGQVCFTFLEALLSDLFRDFDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                     121 ELALILIGVGLLDFCGQVCFTPLEALLSDLFRDFDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421 ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                              PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ASSEDSIMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                9
                                                                                                                                1 MYQRLWYSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RVVPGRGICLDLAILDSAFILSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                          1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                   Gaps
                                   ..
0
                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMBUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/030,606
FILING DATE: 25-PEB-1998
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: SEED and BERRY LLP
STREET: 6300 Columbia Center, 701 Fifth Avenue
CITY: Seattle
Pred. No. 3.7e-245; 
## Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: Maki, David J.
REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 210121,428C3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 113, Application US/09030606
Patent No. US20020081580A1
GENERAL INFORMATION:
```

```
VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541 VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT
ORGANISM: Homo sapien
) LENGTH: 553

; TYPE: PRT

; ORGANISM: Homo sapien

US-09-822-827-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 7
US-09-115-453-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-115-453-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Simi
Matches 553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 113
LENGTH: 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                           à
                                                                                                                                                                               ò
                                                                                                                                                                                                     D
                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                          ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                          \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                         PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGMLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                                              ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RVVPGRGICLDLAILDSAFILLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                             1 MVORLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                               ELALLIGUGLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                     IDWDISALAPYLGTQEECLFGLLTLIFLITCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                         PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                     IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ASSEDSIMISFIPGPKPGAPFPNGHVGAGGSGLLPPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RVVPGRGICLDIAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                   1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 113, Application US/09822827
Fatent No. US20020081680A1
Fatent No. US20020081680A1
Fatent No. US20020081680A1
FATENCANITY XU. Jiangchun
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY AND TITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER
FILE REFERENCE: 210121.5342,827
CURRENT APPLICATION NUMBER: US/09/822,827
CURRENT FILING DATE: 2001-03-28
NUMBER OF SEQ ID NOS: 982
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                        0;
                                                                                                                                                                                               553;
                                                                                                                                                                                              Length
                                                                                                                                                                                                                        Indels
                                                                                                                                                                                            Query Match
Best Local Similarity 100.0%; Pred. No. 3.7e-245;
Matches 553; Conservative 0; Mismatches 0;
           INTERPORTE (206) 622-4900
TELEPHONE: (206) 682-6031
INFORMATION FOR SEQ ID NO: 113:
SEQUENCE CHARACTERISTICS:
LENGTH: 553 amino acids
TYPE: amino acid
STRANDEDNESS: single
TYPEOLOGY: linear
MOLECULE TYPE: protein
ORIGINAL SOURCE:
  TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VVFDKSDLAKYSA 553
                                                                                                                                                        ORGANISM: Homo sapiens
                                                                                                                                                                    US-09-030-606-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 6
US-09-822-827-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                          Ob
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QQ
                                                                                                                                                                                                                                                                                                         \overset{\sim}{\circ}
                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                         Q
DP
                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
```

```
ö
                                               ô
                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                        121 BLALLILGVGLLDFCGQVCFTPLEALLSDFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ASSEDSIMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTBA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL 300
                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                    181 IDWDISALAPYLGTÇEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                     1 MYQRLWYSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEBKFMTMVLGIG
                                                                                                                                                                                                                                                                                ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                  IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AFPVAAGATCLSHSVAVVTASAALIGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Xu, Jiangchun
APPLICANT: Xu, Jiangchun
APPLICANT: Dillon, Davin C.
TITLE OF INVENTION: COMPOUNDS FOR IMMUNOTHERAPY OF PROSTATE CANCER AND
TITLE OF INVENTION: METHODS FOR THEIR USE
FILE REFERENCE: 210121.427C4
CURRENT APPLICATION NUMBER: US/09/115,453B
CURRENT FILING DATE: 1998-07-14
NUMBER OF SEQ ID NOS: 228
SOFTWARE: FastSEQ for Windows Version 3.0
                                               .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 553;
Length
                                               0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
Query Match 100.0%; Score 2861; DB 9;
Best Local Similarity 100.0%; Pred. No. 3.7e-245;
Matches 553; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 2861; DB 9;
ilarity 100.0%; Pred. No. 3.7e-245;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 113, Application US/09115453B
; Patent No. US20020090372A1
; GENERAL INFORMATION:
```

300

360

420

480

吕 à ДD ò Q δ g 8 g 8 D. 8 g ò g δ 윤 δ a

```
ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDFDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                301 YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361 AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481 RVVPGRGICLDLAILDSAFILSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421 ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                 241 CCPCRARLAFRNIGALIPRIHQLCCRMPRIJRRIFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                   CCPCRARLAFRNLGALLPRIHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                      ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-98-793-113

Sequence 113, Application US/09895793

Publication No. US202019276341

Septicant in Sequence 113, Application No. US202019276341

SEPTICANT: Xu, Jiangchun C. APPLICANT: Xu, Jiangchun C. APPLICANT: Dillon, Davin C. APPLICANT: Aralos, Michael D. APPLICANT: Stolk, John A. APPLICANT: Stolk, John A. APPLICANT: Stolk, John A. APPLICANT: Stolk, John A. APPLICANT: Carter, Darick A. APPLICANT: Vavior, Thomas S. APPLICANT: Vavior, Thomas S. APPLICANT: Wardy Aijun T. APPLICANT: Hepler, William T. APPLICANT: Hopter, William T. APPLICANT: Hopter, William T. APPLICANT: Hopter, William T. APPLICANT: Horal, John APPLICANT: Winals de Bassols, Carlota APPLICANT: Vinals de Bassols, Carlota APPLICANT: Vinals de Bassols, Carlota APPLICANT: Vinals de Bassols, Carlota APPLICANT: Froy, Teresa APPLICANT: Proy, Teresa APPLICANT: Proy, Teresa APPLICANT: Vinals de Bassols, Carlota APPLICANT: Vinals de Bassols, Carlota APPLICANT: Proy, Teresa APPLICANT: Vinals de Bassols, Carlota APPLICANT: Proy, Teresa APPLICANT: Proy, Teresa APPLICANT: Vinals de Bassols, Carlota APPLICANT: Proy, Teresa APPLICANT: Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541 VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
ORGANISM: Homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-895-793-113
                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
61
                                                      121
                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                             ò
                                                                                             Db
                                                                                                                                                    ò
                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                   121 ELALLILGVGLLDFCGQVCFTPLEALLSDFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301 YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ASSEDSLMISFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RVVPGRGICLDLAILDSAFILSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                     PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                     ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCPCRARLAFRNIGALLPRIHOLOCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ASSEDSIMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PVLGLVCVPLLGSASDHWRGRYGRRRPIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                           9
                                                         MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                      IDWDTSALAPYLGTQEECLFGLLTLIFITCVATILLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVABLCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                           MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                   PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                  IDWDTSALAPYLGTQBECLFGLLTLIFLTCVAATLLVAEBAALGPTBPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MVQRLMVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Ulangchun
APPLICANT: XU, Jiangchun
APPLICANT: XU, Jiangchun
APPLICANT: Willon, Davin C.
APPLICANT: Mitcham, Jennifer Lynn
TITLE OF INVENTION: COMPONINDS FOR INMUNODIAGNOSIS OF
TITLE OF INVENTION: PROSTATE CANCER AND METHODS FOR THE;
FILE REFERRINCE: 210101.42866
CURRENT APPLICATION NUMBER: US/09/232,880
CURRENT FILING DATE: 1999-01-15
NUMBER OF SEQ ID NOS: 338
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 13
LENGTH: 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 100.0%; Score 2861; DB 9;
Best Local Similarity 100.0%; Pred. No. 3.7e-245;
Matches 553; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 113, Application US/09232880; Publication No. US20020182596A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
CORGANISM: Homo sapien
US-09-232-880-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -09-232-880-113
                                                                                                                                        61
                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
```

ò d ò ö

q

ò g 8 8

 δ

8 8 8

g à Q à g &

δ

В

8 a

```
480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301 YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ELALLILGYGLLDFCGQYCFTPLEALLSDLFRDPDHCRQAYSYYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVABLCSWMALMTFTLFYTDFVGBGL 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YQGVPRAEPGIEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                              09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421 ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361 AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                   1 MVQRLWVSRLLRHRKAQILLVNLLTFGLEVCLAAGITYVPPLILEVGVEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCPCRARLAFRNLGALLPRIHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                       1 MVQRLWVSRLIRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                Gaps
APPLICANT: Fanger, Gary R.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY AND TITLE OF INVENTION: COMPOSITIONS OF PROSTATE CANCER FILE REFERENCE: 210121.427026
CURRENT APPLICATION NUMBER: US/09/895,814
CURRENT FILING DATE: 2001-06-29
NUMBER OF SEQ ID NOS: 990
SEQ ID NO 113
LENGTH: 553
                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                         Length 553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Reed, Steven G.
APPLICANT: Reed, Jiangchun
APPLICANT: Xu, Jiangchun
APPLICANT: Dillon, Davin C.
APPLICANT: Retter, Marc W.
APPLICANT: Harlocker, Susan L.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY
TITLE OF INVENTION: AND DIAGNOSIS OF BREAST CANCER
FILE REPERROCE: 210121.446c7
CURRENT APPLICATION NUMBER: US/10/453,919
                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                       100.0%; Score 2861; DB 9;
100.0%; Pred. No. 3.7e-245;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 101, Application US/10453919; Publication No. US20040033230Al
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541 VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                         Query Match 100.
Best Local Similarity 100.
Matches 553; Conservative
                                                                                                                                                                                                       TYPE: PRT
ORGANISM: Homo sapien
                                                                                                                                                                                                                                                US-09-895-814-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 11
US-10-453-919-101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                              원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                      Ö
                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                PVLGLVCVPLLGSASDHWRGRYGRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                     IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVABLCSWMALMTFTLFYTDFVGEGL 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RVVPGRGICLDIAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL 300
                                                                                                                             9
                                                                                                                                                                  9
                                                                                                                                                             WORLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEBKFMTMVLGIG
                                                                                                                                                                                                           PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                           BLALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                     IDWDTSALAPYLGTQEECLFGLITLIFLITCVAATLLVABEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVGEPTEA
                                                                                                                             1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                      Gaps
                                                                                    .;
0
                                               Length 553;
                                                                                    Indels
                                           100.0%; Score 2861; DB 9; 100.0%; Pred. No. 3.7e-245;
                                                                                        ö
                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 113, Application US/09895814
Publication No. US2002019329641
GENERAL INFORMATION:
APPLICANT: Wi. Jiangchun
APPLICANT: Mitcham, Jennifer L.
APPLICANT: Mitcham, Jennifer L.
APPLICANT: Harlocker, Susan L.
APPLICANT: Falos, Michael D.
APPLICANT: Falos, Michael D.
APPLICANT: Falos, Michael D.
APPLICANT: Fatter, Marc W.
APPLICANT: Fatter, Marc W.
APPLICANT: Vedvick, Thomas S.
APPLICANT: Vedvick, Thomas S.
APPLICANT: Wang, Ajun
APPLICANT: Hepler, Main T.
APPLICANT: Hepler, Walliam T.
APPLICANT: Hepler, William T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hural, John
McNeill, Patricia D.
Houghton, Raymond L.
Vinals de Bassols, Carlota
Foy, Teresa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VVFDKSDLAKYSA 553
                                                                   al Similarity 100.
553; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 10
US-09-895-814-113
      US-09-895-793-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                             Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT
                                                                                      Matches
```

```
61 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFIIPRAGWLAGLLCPDFRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181 IDWDTSALAPYLGTQEBCLFGLLTLIFLTCVAATLLVAEBAALGPTBPABGLSAPSLSPH 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVABLCSWMALMTFTLFYTDFVGEGL 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301 YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421 ASSEDSLMTSFLPGPKPGAPPPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361 AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421 ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLIVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361 AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RVVPGRGICLDLAILDSAFILSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MVQRLWVSRLIRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVBEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
              APPLICANT: Henderson, Robert A.
APPLICANT: Henderson, Robert A.
APPLICANT: Henderson, Robert A.
APPLICANT: Hural, John
J. APPLICANT: Houghton, Raymond L.
APPLICANT: Winals de Bassols, Carlota
APPLICANT: Vinals de Bassols, Carlota
APPLICANT: Panger, Gary R.
APPLICANT: Mantanabe, Yoshihiro
APPLICANT: Mantanabe, Yoshihi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 2861; DB 13; Length 553; ilarity 100.0%; Pred. No. 3.7e-245; Conservative 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Sequence 113, Application US/10010940; Publication No. US20030088062A1; GENERAL INFORMATION:
  Hepler, William T.
Henderson, Robert A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541 VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541 VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; ORGANISM: Homo sapiens
US-10-012-896-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Simil
Matches 553; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 13
US-10-010-940-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                   PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDFRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCPCRARLAFRNIGALIPRIHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ASSEDSIMISFIPGPKPGAPFPNGHVGAGGSGILPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 CCPCRARLAFRNLGALLPRLHQLCCRMPRTILRRLFVABLCSWMALMIFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                              1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                              1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                              ô
                                                                                                                                                                                                                                      Query Match
100.0%; Score 2861; DB 12; Length 553;
Best Local Similarity 100.0%; Pred. No. 3.7e-245;
Matches 553; Conservative 0; Mismatches 0; Indels 0;
CURRENT FILING DATE: 2003-06-03
NUMBER OF SEQ ID NOS: 121
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 113, Application US/10012896
Publication No. US20020183251A1
GENERAL INFORMATION:
APPLICANT: Wi, Jiangchun
APPLICANT: Mitcham, Jennifer L.
APPLICANT: Mitcham, Jennifer L.
APPLICANT: Mitcham, Jennifer L.
APPLICANT: Marcher, Susan L.
APPLICANT: Kalos, Michael D.
APPLICANT: Kalos, Michael D.
APPLICANT: Stolk, John A.
APPLICANT: Stolk, John A.
APPLICANT: Carter, Darrick
APPLICANT: Carter, Darrick
APPLICANT: Carter, Darrick
APPLICANT: Stolk, John A.
APPLICANT: Stolk, Jannifer
APPLICANT: Stolk, Jannifer
APPLICANT: Samuel X.
APPLICANT: Skelky, Yasir A.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VVFDKSDLAKYSA
                                                                                                                           TYPE: PRT
) ORGANISM: Homo sapien
US-10-453-919-101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 12
US-10-012-896-113
                                                                                                     LENGTH: 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \overset{\circ}{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

ö

Gaps

ô

120

09

240

420

```
SEQ ID NO 113
                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Бb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPPAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLFA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PVLGLVCVPLLGSASDHWRGRYGRRRFFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 CCPCRARLAPRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 YQGVPRAEPGTBARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RVVPGRGICUDLAILDSAFILLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEBAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVABLCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
APPLICANT: Xu, Jiangchun
APPLICANT: Dillon, Davin C.
APPLICANT: Mitcham, Jennifer L.
APPLICANT: Mitcham, Jennifer L.
APPLICANT: Matcham, Jennifer L.
APPLICANT: Harlocker, Susan Louise
APPLICANT: Reed, Steven G.
APPLICANT: Reads, Michael
APPLICANT: Ranger, Mark
APPLICANT: Ranger, Mark
APPLICANT: Retter, Mark
APPLICANT: Panger, Gary
APPLICANT: Consocrations and METHODS FOR THERAPY AND
TITLE OF INVENTION: COMPOSITIONS OF PROSTATE CANCER
TITLE OF INVENTION: 20121.42703
CURRENT APPLICATION NUMBER: 120121.42703
CURRENT FILING DATE: 2011-12-05
NUMBER OF SEQ ID NOS: 575
SOFTWARE: PastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 2861; DB 14; Length 553; 100.0%; Pred. No. 3.7e-245; ive 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
5-10-144-678A-113
Sequence 113, Application US/10144678A
; Publication No. US20030157089A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     553
                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 100.
Matches 553; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541 VVFDKSDLAKYSA
                                                                                                                                                                                                                                                                                                                               ) LENGTH: 553

; TYPE: PRT

; ORGANISM: Homo sapien

US-10-010-940-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \stackrel{\circ}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 ELALLIILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421 ASSEDSLMTSFLPGFKFGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IDWDTSALAPYLGTQEECLFGLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421 ASSEDSIMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLBVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181 IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361 AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCPCRARLAFRNLGALL PRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: FOY, Teres M. APPLICANT: FOY, Teres M. APPLICANT: Watanabe, Yeshihiro APPLICANT: Watanabe, Yeshihiro APPLICANT: Watanabe, Yeshihiro APPLICANT: Dang, Ta TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY AND FITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER FILE REFERENCE: 210121 427C28 CURRENT APPLICATION NUMBER: US/10/144,678A CURRENT FILING DATE: 2002-08-12 NUMBER OF SEQ ID NOS: 1033
SOFTWARE: FRASESQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 2861; DB 14; Length 553;
llarity 100.0%; Pred. No. 3.7e-245;
Conservative 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                      Skeiky, Yasir A. W.
Hepler, William T.
Hural, John W.
McNeill, Patricia D.
Houghton, Raymond L.
Vinals y de Bassols, Carlota
Foy, Teresa M.
Watanabe, Yoshihiro
Xu, Jiangchun
Dillon, Davin C.
Mitcham, Jennifer L.
Harlocker, Susan L.
Jiang, Yugiu
Henderson, Robert A.
Kalos, Michael D.
Fanger, Gary R.
Retter, Marc W.
                                                                                                                                                                                                                                           Stolk, John A.
Day, Craig H.
Vedvick, Thomas S.
Carter, Darrick
Li, Samuel X.
Wang, Aijun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 553
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 553; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-144-678A-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
completed: August 25, 2004, 02:34:07
ne : 164.358 secs
Search cor
Job time
                   d
                                                                                                                                                                        RESULT 15

US-10-005-907-13

US-10-005-907-13

Sequence 13, Application US/10005907

Publication No. US20030166881A1

GENERAL INFORMATION:

APPLICANT: Union Chimique Belge, S.A.

APPLICANT: Discourable GENERAL

APPLICANT: Birozzi, Gregory

APPLICANT: Birozzi, Gregory

APPLICANT: Birozzi, Gregory

TITLE OF INVENTION: ACTIVATION

FILE REPERENDE: 053529-5005

CURRENT APPLICATION UNDRER: US/10/005,907

CURRENT PAPLICATION UNDRER: US/10/005,907

CURRENT FILING DATE: 2001-12-07

WUMBER OF SEO ID NOS: 13

SOFTWARE: Patentin version 3.1

SEQ ID NO 13

LENGTH: 553

WANDER OF SEO ID NOS: 13

SEQ ID NO 13

ELENGTH: 553
                                                                                                                                                                                                                                                                                                                                                   핑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDFRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEFAEGLSAPSLSPH 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301 YQGVFRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RVVPGRGICLDLAILDSAFILSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ELALLILGVGLLDFCGQVCFTPLBALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361 AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361 AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ASSEDSIMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481 RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MVQRLWVSRLLRHRKAQ11LLVNLLTFGLEVCLAAGITYVPPLLLEVGVBEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match

100.0%; Score 2861; DB 14; Length 553;
Best Local Similarity 100.0%; Pred. No. 3.7e-245;
Matches 553; Conservative 0; Mismatches 0; Indels 0;
                                                                                                            VVFDKSDLAKYSA 553
                                                                                     541 VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541 VVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-005-907-13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                   à
                                              qq
                                                                                       ò
                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

This Page Blank (Uspta)

```
August 25, 2004, 02:00:53; Search time 49.1993 Seconds (without alignments) 1081.193 Million cell updates/sec
                                                                                                                                                                              US-09-593-793A-113
2861
1 MVQRLWVSRLLRHRKAQLLL......AIYFATQVVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                   283366
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                          283366 segs, 96191526 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 08
Maximum Match 1008
Listing first 45 summaries
                                                                     OM protein - protein search, using sw model
                                                                                                                                                                                                                                                      BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PIR 78:*
2: pir1:*
3: pir2:*
4: pir4:*
                                                                                                                                                                                  Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                            Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description	sucrose-proton tra	sucrose transport	sucrose transport	probable sucrose-p	sucrose transport	sucrose transport	probable sucrose-p	sucrose transport	sucrose transport	sucrose-proton tra	sucrose transport	sucrose transport	sucrose-proton sym	probable sucrose t	probable sucrose t	hypothetical prote	probable sucrose-p	sucrose transport	probable sucrose-p	sucrose transport	probable sucrose c	hypothetical prote			hypothetical prote			MFS	probable MFS trans
	ΩI	T14340	T12198	JQ2389	G84441	S28052	838196	G86360	S48789	S43142	T14339	S48788	S38657	S51114	F96741	T02982	A86234	E96691	838197	A84520	S52377	T38541	F75217	B87532	875696	A75444	E75217	B87536	G83413	G83503
	DB	~	N	7	0	~	~	~	0	7	N	α	C)	N	~	~	7	~	7	0	7	~	7	7	7	7	7	7	~	7
	Length	515	523	516	594	525	512	512	507	533	501	428	510	523	512	537	474	491	513	492	503	553	452	541	544	454	430	418	389	422
* 5	Match	12.1	11.8	11.5	11.5	11.3	11.3	11.3	11.1	10.9	10.7	10.4	10.3	10.3	10.2	10.2	10.0	9.0	9.8	7.6	9.5	8.2	6.7	9.0	5.0	4.9	4.8	4.8	. 4.6	4.5
	Score	47	337.5	330	328.5	324.5	323.5	323.5	317.5	311	305.5	297.5	294	294	292.5	292	286	281.5	279.5	276.5	273	235.5	191	187.5	142	139.5	138.5	136	133	128.5
†[::00 	NO.		7	m	4	S	9	7	8	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28	29

probable permease	resistance protein	probable integral	tetracycline resis	drug efflux protei	sugar transporter,	tetracycline resis	hypothetical prote	tetracycline-efflu	tetA protein - Pse	MFS permease [drug	probable efflux pr	hypothetical metab	multidrug-efflux	puromycin resistan	hypothetical prote
A83096	F82639	E81781	AB3073	G98213	A81206	JQ1479	S74688	H75515	838656	AG2866	D97643	AD0986	C90349	S43017	AF2363
0	N	N	2	7	71	7	7	7	-	~	7	N	N	~	N
			_		_								398	03	483
594	472	451	394	39,	451	399	391	407	399	400	400	440		Ŋ	4
4.5 594										4.3 400		4.3 440	4.2	4.2 5	4.2
128.5 4.5 594	4.5			4.4					4.4		4.3	4.3		4.2	4.2

probable protein probable integral tetracycline resist and efflux protein sugar transporter, tetracycline-efflutetracycline-efflutetracycline-efflutetracycline-efflutetracycline-efflutetracycline-efflutetracycline-efflutetracycline-efflutetracycline-efflutetracycline-efflutetracycline-efflutetracycline-efflutetracycline-effluterycycline-efflux prhypothetical metabmultidrug-efflux thurchycline-efflux thu		5; DB 2; Length 515; 1e-18; thes 215; Indels 79; Gaps GVEEKFWTWVLGIGPVLGLVCVPLLGSASD 7	CGPISGMLVQPIVGYYS -LCPDPRPLELALLILG	GLLDFCGQVCFTPLEALLSDLFR-DPDHCRQAYSVYAFMISLGGCLGYLL 178	FVAELCSWMALMTFTLFYDFVGE 29 LIVTCLANIAWFPFILFDTDWMGR 31 SLVFSLVMDLVQRRGTRAVYLAS 35 LST ST S	VAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQIL 395
A826396 E81781 A81781 A81781 A81781 A818213 A71847 A71886 A7188 A71886 A	carrot Sion 20- 8- and 8 9063785; from GB/ from GB/	Score 347. Pred. No. 80; Mismatc AGITYVPPLLLEV	AĞVQFGWALQLSLLTPYVQI RPFIWALSLGILLSLFLIP : : RPFIASGAGCVAISVILI-	SDLFR-DPDHCI - -	GALLERLHQLCCRMPRTLRRL 	SHSV. KVAQHQREHSAJ
N N N N N N N N N N N N N N N N N N N	ein sy rrot sou full f68;	% 6 4 T	SWAI ALSI SGAC	CRALLSI : CRALLAI 	LGAL FGEL ARRH	WSI
	tt protein - crose/H+ symporta (carrot) equence_revisi equence_revisi 73-1480, 1998 73-1480, 1998 73-1480, 1998 translated fr Lranslated fr b. 116768; NIC	12.1 ty 25.9% ervative hTFGLEVCLA	AAĞVQFG RRPFIWA RRPFIAS	CGQVCFTPLE ANNMLQGPCF DTSALAPYLC	5 5 5	PVAAGATCL LAIGLVMTVA
त प्रच च च च च च च च त त त त त त त	transpo es: suc 1399 #s 1399 #s 1399 #s turm, A 118, 14 118, 14 118, 15 118, 14 118, 15 118, 15 118 118, 15 118, 15 118, 15 118, 15 118, 15 11	imilarit; ; Conse QLLLVNLL	KLVLVAAIAAG HWRGRYGRRFF	GLLDFCGQVCFTPLEALLSDL	HCCP P LYQG 1P	VAAFPVAA : FVNFILAI
128.5 127.5 126.126.5 126.5 125.5 127.5 128.12 123.5 123.5 121.5 121.5	proton ate names: Dance names:	Match local Sil s 131;	8 C 6	130 G 151 W 179 P 211 P	1 6 6 6 1 9 6 6 4	5.9
2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	RESULT 1 114340 Sucrose-proton transport protein - Syldernate names: sucrose/H+ symp C/Species: Daucus carota (carrot) C/Date: 20-Sep-1999 #sequence_revii C/Accession: T14340 B/Shakya, R.; Sturm, A. Plant Physiol: 118, 1473-1480, 1991 A/Atile: Characterization of source A/Reference number: 217991; MUID:99 A/Accession: T14340 A/Status: preliminary; translated A/Molecule type: mRNA A/Residues: 1-515 < SHA> A/Crose-references: EMBL:Y16768; N A/Experimental source: cultivar Nam C/Genetics: C/Genetics: SUTE	Query Ma Best Loc Matches Qy	da Qy Db	. qq qq	6 6 6 6	Oy Dp

carro

```
C;Species: Solanum tuberosum (potato)
C;Date: 22-Aug-1988 #sequence_revision 07-Oct-1994 #text_change 21-Jul-2000
C;Date: 22-Aug-1988 #sequence_revision 07-Oct-1994 #text_change 21-Jul-2000
C;Accession: JQ2389; $40310
F;Risemeier, J.W.; Hirner, B.; Frommer, W.B.
A;Title: Potato sucrose transporter expression in minor veins indicates a role in phloem A;Reference number: JQ2389; MUID:94146554; PMID:8312741
A;Residues: 1-516 «RIE»
A;Cross-references: EMBL:X69165; NID:9439293; PIDN:CA448915.1; PID:9439294
A;Residues: 1-516 «RIE»
A;Cross-references: EMBL:X69165; NID:9439293; PIDN:CA448915.1; PID:9439294
A;Residues: 1-516 «RIE»
A;Cross-references: EMBL:X69165; NID:9439293; PIDN:CA448915.1; PID:9439294
A;Residues: 1-516 «RIE»
A;Cross-references: EMBL:X69165; NID:9439293; PIDN:CA48915.1; PID:9439294
A;Residues: 1-516 «RIE»
A;Re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;429-448/Domain: Liamemer. F;3,92/Binding site: carbohydrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Simi
Matches 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \dot{\delta}
                                                                                                                                                                                                                                                                                               T12198
Sucrose transport protein - fava bean
C;Species: Vicia faba (fava bean)
C;Species: Vicia faba (fava bean)
C;Species: Vicia faba (fava bean)
C;Species: Juli-1999 #sequence_revision 23-Jul-1999 #text_change 20-Jun-2000
C;Accession: T12198
R;Weber, H.; Borisjuk, L.; Heim, U.; Sauer, N.; Wobus, U.
Plant Cell 9, 895-908, 1997
A;Title: A role Grossyar transporters during seed development: molecular characterizati
A;Reference number: Z17451; MUID:97355984; PMID:9212465
A;Accession: T12198
A;Accession: T12198
A;Accession: preliminary; translated from GB/EMBL/DDBJ
A;Relecule type: mRNA
A;Residues: 1-523 <WEB>
                                                                         77 HWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGL-----LCPDPRPLELALLILGV 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         96 RCTSRFGRRRPFIAAGSIAVAIAVFLI---GYAADLGHSFGDSLDQKVRPRAIGIFVVGF 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  153 WILDVANNMLOGPCRALLGDLCAGNORKTRNANAFFSFFWAVGNVLGYAAGAYSKLYHVF 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        213 PFTKTKACNVYCANLKSCFF--LSIALLTVLATSALIYVKETALTPEKTVVTTEDGGSSG 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   294 DFVGEGLYQGVPRAEPGTEARRH-YDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTR 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SVLGVPLAITYSIPFALASIF-----SSTSGAGQGLSLGVLNLAIVIPQMFVS 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        --WDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLV-AEBAALGPTEPA----EGLSAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                236 SLSPHCCPCRARL - AFRNLGALLPRIHOLCCRMPRTLRRLFVAELCSWMALMTFTLFYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GM-----PCFGQLSGAFKEL------KRPWHILLLVTCLNWIAWFPFLLFDT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17 OLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----TASAALTGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              364 VKRIWGIVNĖLL---AICLGLTVLVTKLAQHSRQYAPGTGALGDPLPPSEGIKAGALTLĖ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    388 TFSALQI-----LPYTLASLYHREKQVFLPKYRGDTGGASSEDSL-----MTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KIMVVASIAAGVQFGWALQLSLLTPYVQLLGIHHTWAAYIWLCGPISGMLVQPIVGYHSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GLLDFCGQVCFTPLEALLSDLFR-DPDHCRQAYSVYAFMISLGGCLGYLLPAID---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; Score 337.5; DB 2; Length 523; Pred. No. 5.8e-18; 76; Mismatches 185; Indels 125;
                                       PYTLASLYHREKQVFLPKYRGDTGGASSEDSLMTSFLPGPKPG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FLPGPKPG-----APFPNGHVGAGGSG-----LLPPPP 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            469 VLSGPWDALFGGGNLPAFVVGAVAALASGILSIILLPSPP 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Gene: sut
C;Superfamily: common tobacco sucrose transport protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AVYLASVAAFPVAAGATCLSHSVAVV------
                                                                                                                                                                                 449 GGSGLLP----PPPALCGASACDVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11.8%;
25.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: EMBL:Z93774
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 134; Conserv
                                       396
                                                                                          427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                       a
                                                                                                                                             8
                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90 y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRPLELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPD-HCRQAYSVYAFMISLGGCLG 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 256 QEIDEKLAGAG-----KSKVPF--FGEIFGALKEL----PRPMWILLLVTCLNWIAW 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           286 MTFILFYTDFVGEGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRL 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               :|| ::::| : || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: || :: 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FPFFLYDTDWMAKEVFGG----QVGD--ARLYDLGVRAGAMGLLLQSVVLGFMSLGVEFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64 GLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGL-----LCPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               176 YLLPAIDW-----DTSALAPYLGTQEECLF-GLLTLIFLTCVAATLLVAEE-AALGP
                                                                                                                                                                                                                                                                                                                                                                                      4 RLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TEPAEGLSAPSLSPHCCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       346 VQRFGTRAVYLASVAAFPVAAGATCLSHSVAVV------TASAALTGFT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          127 IMTSFLPGPKPGAPFPNGHVGAGGSG-----LLPPPPALCGASACDVSVRVVVG 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FGGGNLPG------DAKPAVAAASAVLALTMLPSPPA-----DAKPAVAMG
11.5%; Score 330; DB 2; Length 516;
llarity 24.7%; Pred. No. 2.1e-17;
Conservative 93; Mismatches 197; Indels 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ---LPYTLASLYHREK-----
```

sucrose transport protein - potato

RESULT 3 JQ2389

probable sucrose-proton symporter [imported] - Arabidopsis thaliana C;Species: Arabidopsis thaliana (mouse-ear cress)

20;

94

237

297

321

271

```
Nyllernate names sucrements considered that the sucrements of the 
                                                                                                                                                                                                                                                                                                                                                                                                                                      EGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFG--TRAVY 355
                                                                                                                                                                                                                                                                                                                                                                                                SDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLA--GLLCPDP-----RPLELALLIL 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            128 GVGLLDFCGQVCFTPLEALLSDLFR-DPDHCRQAYSVYAFMISLGGCLGYLLPAID---- 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               212 VFPFTKTAACDVYCANLKSCFFISITLIULTILALSVVKERQITIDEIQEEEDLKNRNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SSGC----ARLPF--FGQLIGALKDL----PKPMLILLLVTALNWIAWFPFLLFDTDWMG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SPHCCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEVYGGT------VGEGKLYDOGVHAGALGLMINSVVLGVMSLSIEGLARMVGGAKRLWG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GDTGGASSEDSLMTSFLPGPKPGAPPPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ------GSAVPPPPA--GVKGGALAIFAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----AP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYR
                                                                                                                                                                                                                                                                                                                LXKLGLVASVAAGVQFGWALQLSLLTPYVQLLGIPHTWAAYIWLCGPISGMIVQPLVGYY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----WDTSALAPYLGTQBECLFGLLT-LIFLTCVAATLLVABEAALGPTEPAEGLSAPSL
                                                                                                                                                                                                                                                            23 LLTFGLEVCLAAGITY-----VPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSA
A;Cross-references: EMBL:X67125; NID:g21318; PIDN:CAA47604.1; PID:g21319 C;Superfamily: common tobacco sucrose transport protein C;Keywords: transmembrane protein
                                                                                                                                                                                                 141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EPTEARV-VP------GRGICLDLAILDSAFLLSQV-------
                                                                                                                                   Length
                                                                                                                                                                                                 Indels
                                                                                                                                   ; Score 324.5; DB 2;
; Pred. No. 5.7e-17;
91; Mismatches 196;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sucrose transport protein SUC2 - Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A,Accession: T00773
A,Status: translated from GB/EMBL/DDBJ
A,Molecule type: DNA
A,Residues: 1-490,'A', 492-512 <VYS>
                                                                                                                                   11.3%;
23.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         507 SLFMGSIVQLSQSVTAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 23.2%
Matches 129; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         476
                                                                                                                                                                                                                                                                                                                                     35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           406
                                                                                                                                                                                                                                                                                                                                                                                                75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   183
                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             D
                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                ò
C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 16-Feb-2001
C;Accession: G8441
K;Min, X. ; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y.;
M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon, L.
Buss; D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter, J.
Nature 402, 761-768, 1999
A;Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.
A;Reference number: A84420; MUD:20083487; PMID:10617197
A;Accession: G8441
A;Acsion: G8441
A;Residue: preliminary
A;Molecule type: DNA
A;Cross-references: GB:AE002093; NID:G3461813; PIDN:AAC32907.1; GSPDB:GN00139
C;Genetics:
A;Mone: At2g0286
A;Mone: Atag0286
A;Mone:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          funct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MyAlternate names: sucrose carrier protein, sucrose permease (Species: Spinacia oleracea (Spinach) MyAlternate names: sucrose carrier protein; sucrose permease (Spinach) C)Species: Spinacia oleracea (Spinach) 17-Apr-1993 #text_change 21-Jul-2000 C)Accession: S28052 #sequence_revision 17-Apr-1993 #text_change 21-Jul-2000 C;Accession: S28052 #silnitzer, L.; Frommer, W.B. A;Reference number: Millitzer, L.; Frommer, W.B. A;Reference number: S28052; MUD:93099843; PMID:1464305 A;Reference number: S28052; MUD:93099843; PMID:1464305 A;Molecule type: mRNA A;Molecule type: mRNA A;Residues: 1-525 <RIE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WSDKCTSKYGRRPFILVGSFMISIAVIII---GFSADIGYLLGDSKEHCSTFKGTRTRA 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RAEPGIEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVY-LASVAAFPV 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----PRPLE 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPAI 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TRIQDSAPLLDD------LQSKGLEHSKLNNGTANGIKYERVERDTDEQFGNSENEHQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----GALLPRIHOLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGLYQGVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |::| | ::| | | DETYVDGPGSVLVNLLTSLRHLPPAMHSVLIVMALTWLSWFPFFLFDTDWMGREVYHGDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGD--SLHMELYDQGVREGALGLLLNSVVLGISSFLIEPMCQRMGARVVWALSNFTVFAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGATCLS-------HSVAVVTASAALTGFTFSALQILPYTLASLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SLVTLVLSCTVAAGVQFGWALQLSLLTPYIQTLGISHAFSSFIWLCGPITGLVVQPFVGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----DWDISALAPYLGTQEECLFG-----LUTLIFLT-CVAATLLVAEEAALGPTEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22 NLLIFGLEVCLAAGITY------VPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 594;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  74 ASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLA--GLLCPD---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11.5%; Score 328.5; DB 2; 24.1%; Pred. No. 3.2e-17; ive 72; Mismatches 174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AE-GLSAPSLSPHCCPCRARLAFRNL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----EVTADSGG 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HREKOVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 24.1<sup>§</sup>
Matches 120, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       υ
σν
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             dd
```

405 475

87

DB 2; Length 512;

237

```
SPHCCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVG 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GIVNFIL---AICLAMTVVVTKQAENHRRDHGGAKTGPPGNVTÄGÄLTLFÄILGIPQAIT 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   298 EGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLA 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       389 FSALQILPYTLASLYHREK-------QVFLPKYRGDIGGASSEDSLMISFLPGP 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                119 PLELALLILGYGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLL 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sucrose transport protein - common tobacco
C;Species: Nicotiana tabacum (common tobacco)
C;Date: 27-Jan-1995 #sequence_revision 27-Jan-1995 #text_change 26-May-2000
C;Accession: S48799
R;Buerkle, X.Y.Z.; Frommer, W.B.
submitted to the EMBL Data Library, October 1994
                                                                                                                                                                                                                                                                  28 RLRKIISVSSIAAGVQFGWALQLSLLTPYVQLLGIPHKWASLIWLCGPISGMLVQPIVGY
                                                                                                                                                                                                                                       74 ASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGL-----LCPDPRPLELALLI
                                                                                                                                                                                                                                                                                                                                                                                                                                        -----SNVPF--FGEIFGAFKEL----KRPMWMLLIVTALNWIAWFPFLLFDTDWMG
                                                                                                                                                                                                                                                                                                                                                                                                             179 PAIDWD-TSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSL
                                                                                                                                                      14 RKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGS
                                                                                                                                                                                                                                                                                                                            LGVGLLDFCGQVCFTPLEALLSDLFR-DPDHCRQAYSVYAFMISLGGCLGY-----LL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 RIMVSRLIRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64 GLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDP----R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11.1%; Score 317.5; DB 2; Length 507;
.larity 24.3%; Pred. No. 1.8e-16;
Conservative 87; Mismatches 203; Indels 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: EMBL:X82276; NID:9575350; PID:9575351
C;Superfamily: common tobacco sucrose transport protein
      A,Map position: 1
C,Superfamily: common tobacco sucrose transport protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .,8e-16;
les 203;
                                                                   11.3%; Score 323.5; DB 2; 24.1%; Pred. No. 6.6e-17; ive 92; Mismatches 195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        436 KPGAPFPNGHVGAGGSGLL-----PPPPA 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----FVLGAIAAAVSGVLALTVLPSPPDA 502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SVAAFPVAAGATCLSHSVAV----
                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A, Reference number: S48787
A, Accession: S48789
A, Status: preliminary
A, Molecule type: mRNA
A, Residues: 1-507 < BUE>
                                                                                       Local Similarity
les 123; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 125; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               365
                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                477
                                                                                            Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S48789
                                                                                                                                                                                            a
                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          probable sucrose-proton symporter SUC2 protein T22J18.12 - Arabidopsis thaliana (Species: Arabidopsis thaliana (mouse-ear cress)
C; Species: Arabidopsis thaliana (mouse-ear cress)
C; Accession: G86360
R; Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Greasy, T.H.; Dewar, K.; ansen, N.F.; Hughes, B.; Huizar, L.
A; Authors: Hunter, J.L.; Jankins, L.; Conway, A.B.; Conway, A.R.; Khan, S.; Khaykin, E.; Kim, C.C.A.; Li, J.H.; Lin, Y.; Lin, X.; Liu, Z.A.; Liu, Z.A.; Lucos, J.S.; Maiti, R.; Marziali, Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A; Authors: Salzbergy, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.W.; Sun, H.; Tallon, A; Reference number: Ag6141; MUID:21016719; PMID:11130712
A; Accession: G86360
A; Cross-references: GB:AE005172; NID:g3287687; PIDN:AAC25515.1; GSPDB:GN00141
A;Cross-references: EMBL:AC003979; NID:g3172156; PID:g3287687; GSPDB:GN00059; ATSP:T22JJ
A;Experimental source: cultivar Columbia
C;Genetics:
A;Gene: SUC2; ATSP:T22J18.12
A;Map position: 1
A;Map position: 1
C;Superfamily: common tobacco sucrose transport protein
C;Keywords: sugar transport
                                                                                                                                                                                                                                                                                                                                                                  ASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGL-----LCPDPRPLELALLI 126
                                                                                                                                                                                                                                                                                                                                                                                           LGFWILDVANNTLOGPCRAFLADLSAGNAKKTRTANAFFSFFMAVGNVLGYAAGSYRNLY 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PAIDWD-TSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSL 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPHCCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVG 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLA 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --- QVFLPKYRGDTGGASSEDSLMTSFLPGP 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LGVGLLDFCGQVCFTPLEALLSDLFR-DPDHCRQAYSVYAFMISLGGCLGY-----LL 178
                                                                                                                                                                                                                                                                                                                          87
                                                                                                                                                                                                                                                                               14 RKAQLLLVNLLTFGLEVCLAAGITŸVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGS
                                                                                                                                                                                                                                                                                                          KVVPFTMTESCDLYCANLKTCFFLSITLL-LIVTFVSLCYVKEKPWTPEPTADGKA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----SNVPF--FGEIFGAFKEL----KRPMMMLLIVTALNWIAWFPFLLFDTDWMG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GIVNFIL---AICLAMTVVVTKQAENHRRDHGGAKTGPPGNVTAGALTLFAILGIPQAIT
                                                                                                                                                                                                 DB 2; Length 512;
                                                                                                                                                                                                                                       92; Mismatches 195;
                                                                                                                                                                                                                   .6e-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KPGAPFPNGHVGAGGSGLL-----PPPPA 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----FVLGAIAAAVSGVLGLTVLPSPPDA 502
                                                                                                                                                                                            11.3%; Score 323.5;
llarity 24.1%; Pred. No. 6.6e
Conservative 92; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SVAAFPVAAGATCLSHSVAV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FSALQILPYTLASLYHREK--
                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 123; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      179
                                                                                                                                                                                                                                                                                                                                                                                                                                                   127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          477
                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                      상염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 8
```

λō	qa	ò	QQ	δλ	ag oy	qa	RESULT 10 T14339 SUCTOSE-1	N;Altern C;Species C;Date:	C;Access: R;Shakya Plant Phy	A,Title: A,Refere: A,Access:	A; Molecu A; Residuc A; Residuc A; Cross-1	A; Experi C; Genetic A; Gene: (C; Superf	Query P Best Lo Matches	8 8	g & i	8 & i	a k	g &	දු දු	বু	ò :	g &
Db 132 PRAIAVEVVGFWILDVANNMLQGPCRALLADLSGGKARMRTSNAFFSFFMAVGNVLGYAA 191	OV 179 PAIDWDTSALAPVLGTOEECLF-GILTLIFLTCVAATLLVAEEAALGFTEPA 229	192 GSYSRLCKIFFPSKTFACDIYCANLKSCFFIAVFLLLSLTILALTVVRENELPEKDEH 24	OY 230 EGLSAPSLSPHCCPCRARLAFRNLGALLPRIHQLCCRMPRILRRLFVAELCSWMALMTFT 289	Db 250 EIDEKAGARKSKVPFFGEIFGALKDLPRPMWILLLVTSLNWIARFPFF 297	OY 290 LFYTDFVGEGLYQCVPRAEPGTEARHYDEGVRAGSLGLFLQCAISLVFSLVMDRLVQRF 349	GTRAVYLASVAAFPVA	352 G-GVAKLMGILNEYLAVCMALIYLVIKWAENSKQIDAHGILMAFISGVKIGALIIFA 395LPYILASLYHREKQVFLPKYRGDIGGASSEDSLMIS : : : :	Db 408 VLGIPLAVTFSVPFALÄSIFSSNAGSGQGLSLGVLNLAIVVPQMLVSIAGGPWDDLFGGG 467 Qy 431 FLPGPKPGAPFPNGHVGAGGSGLLPPPPPA 459		RESULT 9 S43142	sucrose transport protein - castor bean N;Alternate names: sucrose carriter C;Species: Ricinus communis (castor bean) C;Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 26-May-2000	C,Accession: \$43142 R,Weig, A.; Komor, E. submitted to the EMBL Data Library, March 1994 A,Description: A sucrose carrier from Ricinus communis.	A.Reference number: S43142 A.Accession: S43142 A.Status: preliminary A.Molecule type: mRNA	A;Residues: 1-533 <wei> A;Cross-references: EMBL:231561; NID:g468561; PID:g468562 C;Superfamily: common tobacco sucrose transport protein</wei>	Query Match Best Local Similarity 23.3%; Pred. No. 6.1e-16; Matches 134; Conservative 95; Mismatches 225; Indels 120; Gaps 19;	QY 17 QLLLUNLLIFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD 76 1::: ::	QY 77 HWRGRYGRRRPFIWALSLGILLSLFLIFRAGWLAG-LLCPDRPLELALLILGVGLL 132	OY 133 DFCGOVCFTPLEALLSDLF-RDPDHCRQAYSVYAFMISLGGCLGYLLPAIDW 183 DD 157 DVANNMLQGPCRALLADLSGTSQKKTRTANALPSFFMAVGNVLGYAAGAYTHLYKLFPFT 216	DISALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAP 23	27	QY 236 SLSPHCCPCRARLAFRNIGALLPRLAQLCCRMPRTLRRLFVABLCSWMALMTFTLFYT 293	OY 294 DFVGEGLXQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRA 353

જે ક	354 VYLASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPK 413 375 KBLMGTNBVI
}	4 YRCDTGCASSEDS: WTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVV 47
6 dd	
ò	474 VGEPTEARV-VPGRGICLDLAILDSAFILLSQVAPSLFMGSIVQLSQS 519
QQ	LSIVIPO
çy G	520 VTAYMVSAAGLGLVAIYFATQVVFDKSDLAKYSA 553 : :
RESULT	10
T14339 sucrose N;Alter	a-proton transport protein - carrot rnate names: sucrose/H+ symporter protein
C;Speci C;Date: C:Acces	tes: Daucus carota (carrot) : 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 21-Jul-2000 sion: T14339
R;Shaky Plant P	866
A;Title A;Refer	e: Characterization of source- and sink-specific sucrose/H+ symporters from race number: Z17991; MUID:99063785; PMID:9847123
A; Acces A; Statu A; Molec	LS: preliminary; translated from GB/EMBL/DDBJ cule type: mRNA
A; Resid A; Cross A; Exper	A; Residues: 1-501. <sha> A; Cross-references: EMBL:Y16766; NID:g2969886; FIDN:CAA76367.1; PID:g2969887 A; Experimental source: cultivar Namtaise: leaf</sha>
A;Gener A;Gene: C;Super	SUTION SUTION SUCTOSE TRANSPORT PROTEIN
Query N Best Lo Matches	y Match Local Similarity 21.6%; Pred. No. 1.5e-15; hes 124; Conservative 91; Mismatches 213; Indels 145; Gaps 14;
ò	18 LLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASDH 77
qu	30 LERVASVACGIQFGWALQLSLLTPYVQELGIPPHAWSSIIWLCGPLSGLLVQPIVGHMSDQ 89
λο i	78 WRGRYGRRRPIWALSLGILLSLFLIPRAGWLAGLLCPDPRPLELALLILGVGLLDFC 135
8 8	GOVCETPLEALLSDLF-RDPDHCROAXSVYAFMISLGGCLGYLLPAIDWDTSALAPYLGT 19
; a	0 NNMIQGPCRALLADLIGNDARRIRVANAYFSLEMAIGNVLGYAIGAYSGW 1
δλ	195 OBECLEGLITLIFLTCVAATLLVAEEAALGPTEPAEGL 232
Ор	200 YKVFPFSLTSSCTINCANLKSAFYIDIIFIIITTYISISAAKBRPRISSQDGFQFSEDGT 259
γ	SSLSPHCCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTI
qq	260 AQSGHIEBAFIWELFGTFRLLPGSVWVILLVTCLNWIGWFPFILFD 305
δλ	RAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFG
q	306 İDMMGREIYGGEPNQGQSYSDGVRMGAFGLMMNSVVLGITSVLMEKLCRIWGSG 359
ζ	353 AVYLASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLP 412
qq	360 FWW388
λο	413 KYRGDIGGASSEDSLMISFLPGPKPGAPPPNGHVCAGGSGLLPPPPALCGASACDVSVRV 472

carro

```
17 QLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD 76
                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        임
                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 જ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                473 VVGEPTEARV-VP-----GRGICLDLAILDSAFLLSQVAPSLFMGSIVQL---- 516
                                                                       ILGIPLAITYSVPYALVSTRIESLGLGQGLSMGVLNLAIVVPQVIVSLGSGPWDQLFGGG 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75 GMIVQPVVGYYSDNCSSRFGRRPFIAAGAALVTIAVFLIGFAADL-GHASGDPLGKGSK 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       297 WFPFFLYDTDWMAKEVFGG----QVGD--AKLYDLGVRAGALGLLLQSVVLGFMSLGVEF 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----GINPPPN----GIVISALIVFA 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64 GLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDP----R 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPD-HCRQAYSVYAFMISLGGCLGY- 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  285 IMTFTLFYTDFVGEGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDR 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4 RIWYSRILRHRKAQLILVNLILFGLBVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVL 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    74
                                                                                                                                                                                                                       S48786
Sucrose transport protein - tomato (fragment)
Cjopcies: Lycopersicon esculentum (tomato)
Cjopcies: Lycopersicon esculentum (tomato)
Cjopcies: 27-Jan-1995 #sequence_revision 27-Jan-1995 #text_change 09-Jun-2000
CjAccession: S48788
RjBuerkle, XyYZ., Frommer, W.B.
RjBuerkle, XyYZ., Frommer, W.B.
AjReference number: S48787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sucrose transport protein ptpl - common plantain
NiAlternate names: sucrose transporter ptpl
C;Species: Plantago major (common plantain)
C;Date: 19-Mar-1997 #sequence_revision 06-Jun-1997 #text_change 26-May-2000
C;Accession: S3867.
C;Accession: S3867.
N: Stolz, M: Stolz, J: Sauer, N.
submitted to the EMBL Data Library, November 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      194 AGSYSRLFKVFPFSKTKACDMYRANLKSCFFIAIFLLLSLTTLALTLVRENELPEKEELE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       225 PTEPAEGLSAPSLSPHCCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 254 IDEXLSGAG-----KSKVPF--FGEIFGALKDL----PRPMMILLLUTCLNWIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----LLPAIDWD-TSALAPYLGTQEECLF-GLLTLIFLTCVAATLL----VAEEAALG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                345 LVQRFGTRAVYLASVAAFPVAAGATCLSHSVAVV-----TASAALTGFT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10.4%; Score 297.5; DB 2; Length 428; 25.8%; Pred. No. 5.1e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         82; Mismatches 163; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Superfamily: common tobacco sucrose transport protein
                                                                                                                                      517 -SQSVTAYMVSAAGLGLVAIYFATQVVFDKSDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |:|| | :|| 407 LLLFAALGIPLAVTFSIPFALA 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---FSALQI-----LPYTLA 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Cross-references: EMBL: X82275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 25.8
Matches 114; Conservative
                                                                         407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       838657
                                                                 Db
                                ò
                                                                                                           Ś
                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
```

```
20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      262 P------VPPELFGALKDLPRPMWVLLLVTALNWIAWFGFLLFDTD 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             295 FVGEGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFG---- 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                        88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sucrose-proton symporter - beet
C;Species: Beta vulgaris (beet)
C;Dacession: S7.114
R;Westram, A.; Eckhardt, U.; Frommer, W.B.; Riesmeier, J.W.
submitted to the EMBL Data Library, January 1995
A;Description: Sequence of a sugar beet sucrose transporter CDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                       205 PFSKTKACDIYCANLKSCFIISITLLITLTLALSIVREKRHVAEEQV---TAAKKGFKI
A;Reference number: S38657
A;Accession: S38657
A;Accession: S38657
A;Accession: S38657
A;Accession: MSNA
A;Molecule type: mRNA
A;Reidues: 1-510 <CAH>
A;Cross-references: EMBL:X75764; NID:g415987; PIDN:CAA53390.1; PID:g415988
C;Genetics:
A;Gene: ptpl
C;Superfamily: common tobacco sucrose transport protein
C;Keywords: sugar transport
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                78 WRGRYGRRRPFIWALSLGIL-LSLFLIPRAGWLAGL-----LCPDPRPLELALLILGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |:|||||||| | :: :: | | :: :: | CTSRFGRRRPFI-AAGAGLVGVAVVLI---GFAADLGHAGGDSLGDGLKPRAIGVFVFGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             130 GLLDFCGQVCFTPLEALLSDLF-RDPDHCRQAYSVYAFMISLGGCLGYLLPAID-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             183 --WDTSALAPYLGTQEEC-LFGLLTLIFLTCVAATLL----VAEBAALGPTEPAEGLSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                302 WMGREVY-GETQQHKAPELAVIYNKGVSAGALGLMLNSIVLGFASLGVQYMARALGGVKR
                                                                                                                                                                                                                                                                                                                                                                                                   18 LLLUNLLIFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASDH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PSLSPHCCPCRARLAFRNLGALLPRIHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          351 -----TRAVYLA-SVAAFPVAAGATCLSHSVAVVTASAALTG--FTFSALQI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -LPYTLASLYHREKOVFLPKYRGDTGGASSEDSL-------MTSFLPGPKPG---
                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                    10.3%; Score 294; DB 2; Length 510; 24.7%; Pred. No. 1.1e-14; tive 77; Mismatches 199; Indels 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10.3%; Score 294; DB 2; Length 523; 24.3%; Pred. No. 1.2e-14; Live 78; Mismatches 199; Indels 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Accession: S51114
A;Status: preliminary
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Molecidues: 1-523 < www.ss>
A;Cross-references: EMBL:X83850; NID:g633171; PID:g633172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Superfamily: common tobacco sucrose transport protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGNLPAFVVGAVAAASGIFAFTMLPSPPA 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----APFPNGHVGAGGSG-----LLPPPPA 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best_Local Similarity 24.3% Matches 125; Conservative
                                                                                                                                                                                                                                                                                                                                              126; Conservative
                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
```

93 RCESRFGRRPFIAAGVALVAVSVFLIGPAADMGHSFGDKLENKVRTRAIIIFLTGF 14	OY 130 GLIDECGQVCFTPLEALLEDINKTDPHCKQAYXYAFMISLGGGLGYLL	д— Н 0	239	CY 239 GLIQOVERABEGIEARKHIIDEGVRMSLGLELDVEBVWIDKLYGKFGIRAYIIAS 358	OY 359 VAAPPVAAGATCLSHSVAVVTASAALTGFTFSALQIL DD 367 CVNFILAIGLAMTVLVTKSAEHHREIAGPLAGPSSGIKAGVFSLFTVLGIPLAITYS 375	ਜ਼ ∃ 3 3 8 2 2 3 8	GASSEDSLMT 4	RESULT 15 T02982 T02082 Probable sucrose transport protein - rice	Plant Cell Physiol. 38, 1389-1396, 1997 A,Title: cDNA cloning and tissue specific expression of a gene for A,Reference number: Z14809; MUID:98182940; PMID:952469	Alonso,	Kim, C. farziali,	Tallon,	Query Match 10.2%; Score 292; DB 2; Length 537; Best Local Similarity 26.7%; Pred. No. 1.7e-14; Matches 115; Conservative 72; Mismatches 167; Indels 76; Gaps 19;	Qy 17 QLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD	AAF34308.1; GSFDB:GN00141 DD 51 KLILSGMVAGGVQYGWALQESLITEYVQILGESHALTSFMWLGGFLAGMVQPCVGLYSD 110 QY 77 HWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRAGWLAGLLCDDPRAGWLAGLLCDD	DD 111 RCTSKWGRRRPYILTGGVLICLAVVVIGFSADIGYAMGDTKEDCSVYHGSRWHAAIVYVL	Length 512; Capt Length 512; Capt Length 512; Length 512;	WVLGIGPVLGLVCVPLLGSASD 76 QY 183 -WDTSALAPYLGTQBECLFGLLTLIFLT-CVAATLLVAEEAALGPT- 226 :	284 ON THE PRINCIP SET OF THE PROPERTY OF THE
: : : : : 3LLTPYVQLLGIPHTWAPYIWL	HWGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPLELALLILGV ::	GLLDFCGQVCFTPLEALLSDLFRDPD-HCRQAYSVYAFMISLGGCLGYLL 	AIDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSP 	HCCPCRARLAFRNLGALLPRIHQLCCRMPRTLRRLFVABLCSMMALMTFTLFYTDFVGBG :	LYQGVPRAEDGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLA 	SVAAFPVAAGATCLSHSVAVVTASA	TESALQII PYTLASLYHREK	SFLPGPKPGAPFPNGHVGAGGSGLLPPPP 458	cotein F17M19.4 [imported] - ina (mouse-ear cress) _revision 02-Mar-2001 #text	Palm, C.J.; Federspiel, N In, L.; Conway, A.B.; Conway, ar.	Nature 408, 816-820, 2000 A;Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; N	7, D.; Sakano, H. thwartz, J.R.; Shinn, P.; So ter C M · Venter J C · Dev	s of chromosome 1 of the pludic 1010:21016719; PMID:11130712		GB:AEGUSI/3; NID:GGG/8VI4; FIDN:AAF343U0	Map position: 1 Superfamily: common tobacco sucrose transport protein	10.2%; Score 292.5; DB 2; L larity 23.8%; Pred. No. 1.5e-14; Conservative 87; Mismatches 211; I.	17 QLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTWVLGIGPVLGLVCVPLLGSASD :::	:Deimogaaliais:Filois:igmidaaackabamh 22

438 FLGVPLAVLY 447	Dp
394 ILPYTLASLY 403	ζ
ISFWSLKDFHGTVQ	QΩ
344 RLVQRFGTRAVYLASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQ 393	λŏ
321 WFPFILYDTWMGREIYHGDPKGTDPQIEAFNQGVRAGAFGLLINSIVLGFSSFLIE 377	qq
285 IMTFTLFYTDFVGEGLYQGVPR-AEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMD 343	ò
282 SNEPAEPEGTGPLAVLKGFRNLPTGMPSVLIVTGL-TWLS 320	QQ

Search completed: August 25, 2004, 02:28:38 Job time: 51.1993 secs

OCCUPATION OF SHARE SHAR

```
P58355 mus musculu
Q9umx9 homo sapien
Q8b473 mus musculu
Q8k483 rattus norv
Q03411 spinacia ol
Q9y2w3 homo sapien
O14091 sphizosacch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              streptomyce
escherichia
escherichia
aalmonella
mycobacteri
noca adpien
homo sapien
thermus the
homo sapien
thodobacter
xanthomonas
pseudomonas
pseudomonas
saccharomyc
salmonateri
mycobacteri
rhodobacteri
randomonas
pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          synechocyst
homo sapien
escherichia
                                                                                                                                                                    August 25, 2004, 01:58:37 ; Search time 29.5196 Seconds (without alignments) 975.448 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                      US-09-593-793A-113
2861
1 NVQRLWVSRLLRHRKAQLLL.......AIYFATQVVFDKSDLAKYSA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   141681 seqs, 52070155 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MATP MOUSE
MATP HUMAN
PAST RAT
SUT SPIOL
BAST RAT
SUT SPIOL
BAST HUMAN
SUTI SCHPO
CTO HUMAN
TCRI ECOLI
PROSE STRIP
ANGE SCOLI
SWA SALTY
VOST WEACT
COPER XNCP
COLIA HUMAN
YENDA RHOCK
COPER XNCP
COLIA SERAE
SPIOC RHOCK
STRIP
SPIOC RHOCK
TREAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SwissProt_42:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match Length
                                                                                                                                                                                                                                                                                         Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4889.5

488.5

486.5

4466

142.5

142.5

111.5

111.1

111.1

111.5

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

111.1

11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database :
                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Searched:
                                                                                                                                                                             ë
ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Result
No.
```

```
448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TQEECLFGLLTLIFLTCVAATLLVAEEAAL --GPTEP-----AEGLSAPSLSPHCCPC 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MALMIFILFYIDFVGEGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVM 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAPLSNMLFPTDFMGQIVYHGDPYGAHNSTEFLIYERGVEVGCWGLCINSVFSSVYSYFQ 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             343 DRLVQRFGTRAVYLASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASL 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----LGFLVNMAGSVVV 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34 RLVMGSMAMFGREFCYAVEAAYVTPVLLSVGLPKSLYSMVWLLSPILGFLLQPVVGSASD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                269 GSIEKVKNGGADTEQPVQEWKNKKPSGQSQRTMSMKSLLRALVNMPSHYRCLCVSHLIGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YHREKQVFLPKYRGDTGGASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ASACDVSVRVVVGEPTEARVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRP---LELALLILGVGLLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FCGOVCFTPLEALLSDLFRDPDHCROAYSVYAFMISLGGCLGYLLPAIDWDTSALAPYLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FSADFIDGPIKAYLFDVCSHQDX-EKGLHYHALFTGFGGALGYILGAIDWVHLDLGRLLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----LLPRLHQLCCRMPRTLRRLFVAELCSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YHREEE----KEKGQEA-----DCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD
                                                                                                                                                                                                                                                                                                                                                                                                                                            D -> N (IN UW-DBR).

S -> P (IN UW-DBR).

F4 BPDER A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17.1%; Score 489.5; DB 1; Length 530; 26.1%; Pred. No. 1.9e-28; Indels 101; ive 85; Mismatches 228; Indels 101;
                                                                                                                                                                                                                                                                                         9 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
10 (POTENTIAL).
                                                S (FOIENTIAL) .

EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F4EDEAD07916D9FC CRC64;
                                                                                                                                     S (FOIENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                    11 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
               CYTOPLASMIC (POTENTIAL). 3 (POTENTIAL).
                                                                                                                                                                 6 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                               4 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
5 (POTENTIAL).
                                                                                                                                                                                                                                                               CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                       CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                 12 (POTENTIAL).
CYTOPLASMIC (POTENTIAL)
N-LINKED (GLCNAC. ..)
                                                                                                                                                                                                       (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALTCMVQL-----AQILVGGG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            507 VVITASAVSLIGCEVALFV 526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YMVSAAGLGLVAIYFATQVV 542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RARLAFRNLGA------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           57961 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity 26.1 les 146; Conservative
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
11059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           530 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
VARIANT
TRANSMEM
DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
                                                                                                      DOMAIN
TRANSMEM
                                                                                                                                                                 TRANSMEM
DOMAIN
TRANSMEM
                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                       DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 523
                                                                                                                                                                                                                                                                                              PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VARIANT
                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          СD
  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
```

RESULT

```
MEDLINE=2238257; PubMed=12477932;

Astrauberg R.L., Feingold B.A., Grouse L.H., Derge J.G.,

Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

Antochenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

Atapleron M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

Astapleron M.J., Usdin T.B., Toshhyuki S., Carninci P., Prange C.,

Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

Astchards S., Worley K.C., Hale S., Garcia A.M., Gabbs R.A.,

Anithing M., Madan P.J., Young A.C., Shevchenko Y., Bouffard G.G.,

Bakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,

Aschield Y.S.N., Krzywinski M.L., Skalska U., Smailus D.E.,

Butterfield Y.S.N., Krzywinski M.L., Skalska U., Smailus D.E.,

"Generation and initial analysis of more than 15,000 full-length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDILINE=21473748; PubMed=11774907;
Newton J.M., Cohen-Barak O., Hagiwara N., Gardner J.M., Davisson M.T.,
King R.A., Brilliant M.H.;
King R.A., Brilliant M.H.;
"Mutations in the human orthologue of the mouse underwhite gene (uw)
underlie a new form of conlocutaneous albinism, OCA4.";
Am. J. Hum. Genet. 69:981-988(2001).
-!- FUNCTION: Melanocyte differentiation antigen. May transport
substances required for melanin biosynthesis (By similarity).
-!- SUBCELLULAR LOCATION: Integral membrane protein; melanosome (By
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               melanocytes.
DISEASE: Defects in MATP are the cause of oculocutaneous albinism
MATP HUMAN STANDARD; FKI; JOURNAY OBSTMA;
20-MX5, OBSTMA;
28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Membrane-associated transporter protein (AIM-1 protein) (Melanoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IsoId=Q9UMX9-2; Sequence=VSP_006297, VSP_006298, VSP_006299;
                                                                                                                                                                   Homo sapiens (Human).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi;
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE SPECIFICITY: Expressed in most melanoma cell lines and
                                                                                                                                                                                                                                                                                                                MEDINE-21115844, PubMed=11221837;
Harada M., Li Y.F., El-Gamil M., Rosenberg S.A., Robbins P.F.;
"Use of an in vitro immunoselected tumor line to identify shared
melanoma antigens recognized by HLA-A*0201-restricted T cells.";
Cancer Res. 61:1089-1094(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         numan and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Event=Alternative splicing; Named isoforms=3;
Comment=Additional isoforms seem to exist;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Name=AIM-1c;
IsoId=Q9UMX9-3; Sequence=VSP_006296;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IsoId=Q9UMX9-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. (ISOFORM AIM-1A).
                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. (ISOFORM AIM-1B)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished observations (NOV-2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISEASE, AND VARIANT LEU-374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            similarity).
ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ALTERNATIVE SPLICING.
                                                                                                                                                                                                                                   NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                   rissum=Melanoma;
                                                                                                                        antigen AIM1).
MATP OR AIM1.
```

274

----RLAFRNL-----GALLPRIHQLCCRMPRTLRRL

245 RA-----

g

96 AG

à

261 SSDGMYEYGSIEKVKNGYVNPELAMQGAKNKNHAEQTRRAMTLKSLLRALVNMPPHYRYL

335

395

8 8

SLVFSLVMDRLVQRFGTRAVYLASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQI

466

g

455 PPPPALCGASACDVSVRVVVGEPTEARVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIV

441 VPFNLITEYHREEE----KERQQA-------PGGDP---

8 8 8 8

125 LILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPAIDWD

204 HLELGRILGTEFQVMFFFSALVLTLCFTVHLCSISEAPL--TEVAKGI-PPQQTPQDPPL

185 TSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPHCCPC

68 VPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPR----PLELAL

8 8

SRLIMHSMAM-----FGREFCYAVEAAYVTPVLLSVGLPSSLYSIVWFLSPILGFLL

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BMBD outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
type 4 (OCA4) [MIM:606574]. OCA4 is characterized by hypopigmentation of skin, hair and eyes. It leads to reduced visual acutry.

**Sual acutry.**
CAUTION: Belongs to the glycoside-pentoside-hexuronide (GPH) cation symporter transporter (TC 2.A.2) family.

**CAUTION: Ref. 2 sequence differs from that shown due to a frameshift in position 188
CAUTION: The described alternatively spliced isoforms are inferred using information from ESTs.

DATABASE: NAME-Mutations of the MATP gene;

NOTE-Retina International's Scientific Newsletter;

WWW="http://www.retina-international.com/sci-news/matpmut.htm".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YPQKVIJVSYIGLKGLYFTGYL -> CKSFSLLRMSSKSFWS
STFWI (in isoform ALM-1b).
Frid=VSP_006299.
Missing (in isoform AIM-1b).
/Frid=VSP_006299.
                                                                                                                                                                                                                                                                                                                       Melanin biosynthesis; Transmembrane; Antigen; Glycoprotein; Vision;
Polymorphism; Albinism; Alternative splicing.
DOMAIN 1 46 CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CYTOPLASMIC (FOTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
Missing (in isoform AIM-1c).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
T (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
8 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
9 (POTENTIAL).
EXTRACELLULAR.
                                                                                                                                                                                                                                                                                                                                                                                   2 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
3 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
4 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /FIId=vSP 006296.
Missing (In isoform AIM-1b)
/FIId=vSP 006297.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
12 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    F -> L.
/FTIG=VAR_012162.
F14A4BACAA8FF31B_CRC64;
                                                                                                                                                                                                                                                                                                                                                             1 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                            5 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                    EMBL; AF172849; AAD51812.1; -.
EMBL; BC003597; AAH03597.1; ALT_FRAME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           530 AA; 58301 MW;
                                                                                                                                                                                                                                                                                   Genew, HGNC:16472; MATP.
MIM; 606202; -.
MIM; 606574; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        406
                                                                                                                                                                                                                                                                                                                                                             374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       386
                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /ARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /ARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
```

```
SECURINE E2354683; PubMed=1246681;

X STRAIN=C57EL/64; TISSUE=Cerebellum;

MEDLINE=22354683; PubMed=1246681;

A Nikaido I., Osato N., Saito R., Suzuki H., Yamanaka I., Kiyosawa H.,

Nikaido I., Osato N., Saito R., Suzuki H., Yamanaka I., Kiyosawa H.,

Yagi K., Tomaru Y., Hasegawa Y., Nogami A., Schonbach C., Gojobori T.,

Baldarelli R., Hill D.P., Bult C., Hume D.A., Quackenbush J.,

Blake J.A., Bradt D., Brusic V., Chothia C., Corbani L.E., Cousins S.,

Blake J.A., Bradt D., Brusic V., Chothia C., Corbani L.E., Cousins S.,

Blake J.A., Bradt D., Fletcher C.F., Forrest A., Frazer K.S.,

Casterland T.A., Fletcher C.F., Forrest A., Frazer K.S.,

Crimmond S., Gustincich S., Hirokawa N., Jackson I.J., Jarvis E.D.,

Kanai A., Kawaji H., Kawasawa Y., Kedzierski R.M., King B.L.,

Kanai A., Kausochkin I.V., Lee Y., Lenhard B., Lyons P.A.,

Maglott D.R., Maltais I., Marchionni L., McKenzie L., Miki H.,

Nagashima T., Numata K., Okido T., Pavan W.J., Pertea G., Pescole G.,

Petrovsky N., Pillai R., Pontius J.U., Qi D., Ramachandran S.,

Ravasi T., Reed J.C., Reed D.J., Reid J., Ring B.Z., Ringwald M.,

Sandelin A., Schneider C., Semple C.A., Setou M., Shimada K.,
                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                         (Deleted in
                                                                                                                                                                                                             15-MAR-2004 (Rel. 43, Created)
15-MAR-2004 (Rel. 43, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Procton-associated sugar transporter A (PAST-A) (Deneuroblastoma 5 protein homolog) (DNb-5 homolog).
                                                                                                                                                                     751 AA
542
515 OLSOSVTAYMVSAAGLGLVAIYFATOVV
                                | : | : : | : | NTAGTVVVVVITASAVALIGCCFVALFV
                                                                                                                                                                                                                                                                                                                                                          Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                     MOUSE
                                               499
                                                                                                                                                                   PAST MOT
QBBIV7;
                                                                                                                                                                                                                                                                                                                                      DNB5
ò
```

17.1%; Score 488.5; DB 1; Length 530; 26.4%; Pred. No. 2.3e-28; ative 78; Mismatches 233; Indels 107; Gaps

Query Match Best Local Similarity 26.4% Matches 150; Conservative

```
751 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=22305182; PubMed=12417639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AB075229; BAB97313.1; -.
                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                            Rattus norvegicus (Rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       143
175
211
223
2288
2288
556
626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                        ---- PR---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
                        258
                                                                                                                                                                                                                                     674
                                                                                                                                                                                                                                                                                                                                             PAST RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                                                       08K483;
                                                                                                                                                                                                                                                                                                                       RESULT 4
                                                                                                                                         임
                                                                                                                                                                                      g
                                                                                                                                                                                                               à
                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                         ద
                                                                     \stackrel{>}{\circ}
                                                                                        d
                                                                                                                 à
                                                                                                                                                           ò
                       ò
                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            146 RCTSRFGRRPFILVLAIGALLGLSLLLN-GRDIGMALADTATNHKWGILLTVCGVVLMD 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPAIDWDTSALAPYLG 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GOLRVIYVFTAITLSVTTVLTLISIPERPLRPLGEKRTAMKSPSLPLPPSPPVLLEEGAG 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     324 DALPSTTATSLYASFSSPISPPSPLTPKYGSFISRDSSLTGINEFASSFGTSNIDSVLID 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -- 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94
                                                                                                        Birney E., Hayashizaki Y.; "Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDP----RPLBLALLILGVGLLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD
              ij
Sultana R., Takenaka Y., Taylor M.S., Teasdale R.D., Tomita M., Verardo R., Wagner L., Wahlestedt C., Wang Y., Watanabe Y., Wells C. Wilming L.G., Wynahaw-Boris A., Yanagisawa M., Yang I., Yang L., Yang L., Zavolan M., Zhu X., Zimmer A., Carninci P., Hayatsu N., Hirozane-Kishikawa T., Konno H., Nakamura M., Sakazume N., Sato K., Shiraki T., Waki K., Kawai J., Aizawa K., Arakawa T., Fukuda S., Hara A., Hashizume W., Imotani K., Ishii Y., Itoh M., Kagawa I., Yasunishi A., Yoshino M., Waterston R., Lander E.S., Rogers J., Birney E., Hayashizaki Y.;
                                                                                                                                                                                      SIMILARITY: Belongs to the glycoside-pentoside-hexuronide (GPH) cation symporter transporter (TC 2.A.2) family.
CAUTION: Ref.1 sequence differs from that shown due to a
                                                                                                                                                        -!- FUNCTION: Mediates glucose uptake along the pH gradient (By
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  212; Indels 268;
                                                                                                                                                                              SUBCELLULAR LOCATION: Integral membrane protein (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 751;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 194 TQEECLFGLLTLIFLTCVAATLLVAEEAALGPT-EPAEGLSAPSL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---CRARLAFRNLGALL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8242480E154F6BE1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                 Sugar transport; Symport. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15.8%; Score 451; DB 1; 21.7%; Pred. No. 1.8e-25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL
                                                                                                                                                                                                                                                                                                                                             EMBL; AK082651; BAC38560.1; ALT_FRAME.
                                                                                                                                                                                                                           frameshift in position 217.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       81420 MW;
                                                                                                                                                                                                                                                                                                                                                                                   Transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                            Nature 420:563-573(2002)
                                                                                                                                                                                                                                                                                                                                                                                                         143
2211
2211
2211
2288
556
626
650
708
                                                                                                                                                                                                                                                                                                                                                                    MGD; MGI:2653235; Dnb5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     751 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 155; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              244
                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
   QΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dp
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropean Bioinformatics Institute. There are no restrictions on its work by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                       368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        676
384 CFTAGHDNYLALPSSVPRQAISVSFPRAPDGFYCQERGLERREGPLTLGSDGDVLRVGSL 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                 369 TCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGGASSEDSLM 428
                                                                                                                                                                                                                               524 ATLSRNLYVVLSLCTTYGILFSTLCTLPYSLLCDYYQSK-----KFAG-----SADGTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .-----RGM
                                                                                                                         444 DTSKPRASGILKRPQTLALPDVAGGNGPETSRRRNVTFSQQVANILLNGVKYBSELTGSS
                                                                                                                                                                                      260 ------LHQLCC----RMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGLYQGVPRAE
                                                                                                                                                                                                                                                                                                                    309 PGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVAAFPVAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           129 TSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEARVVPGRGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Merazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBL_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 677 GVDISLLSCQYFLAQILVSLVLGP-----LTSAVGSANGVMYFSSLVSF 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Σ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shimokawa N., Okada J., Haglund K., Dikic I., Koibuchi N., Miura
"Past-A, a novel proton-associated sugar transporter, regulates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            489 CLDLAILDSAFILSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQVVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  transport; Symport
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  [5-MAR-2004 (Rel. 43, Created)
15-MAR-2004 (Rel. 43, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Proton-associated sugar transporter A (PAST-A).
```

വ

```
TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            212
                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               272
                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                 15;
                                                                                                                                       204
                                                                                                                                                                                                                                                  381
                                                                                                                                                                                                                                                                                                                                                                                                                   426
                                                                                                  145
                                                                                                                                                                          263
                                                                                                                                                                                                                                                                                                                                                                                                                                                       486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        674
                                                                                                                                                                                                                                                                                    382 IBCFTAGHDNYLALPSSVPRQAISVSFPRAPDGFYCQBRGLERREGPLTLGLDGDVLRVG 441
                                                                                                                                                                                                                                                                                                                         501
                                                                                                                                                                                                                                                                                                                                          -----LHQLCC---RMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGLYQGVPR 306
                                                                                                                                                                                                                                                                                                                                                      SSEQSEQPLSLRRLCSTIYNMPRPVRNLCVNHFLGMLSFEGMLLFYTDFMGEVVFQGDPK 561
                                                                                                                                                                                                                                                                                                                                                                               AEPGIEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVAAFPVAA 366
                                                                                                                                                                                                                                                                                                                                                                                           APHASEAYQKYNSGVTMGCWGMCIYAFSAAFYSAILEKLEECLSVRTLYFIAYLLFGLGT 621
                                                                                                                                                                                                                                                                                                                                                                                                                             GLATLSRNLYVVJSLCTHYGILFSTLCTLPYSLLCDYYOSK-----KFAG-----SSADG 671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQVVF 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GMGVDISLLSCOYFLAQILVSLVLGP-----LISAVGSANGVMYFASLVSF 720
                                                                                            :||:||:||||||||ELLFNGCILFGIEFSYAMETAYVTPVILQMGLPDQLYSLVWFISPILGFLLGPLLGAWSD
                                                                                                                                    RCTSRFGRRPFILVLAIGALLGLSLLLN-GRDIGMALADTATNHKWGILLTVCGVVLMD
                                                                                                                                                                    TOEECLFGLLTLIFLTCVAATLLVA-----EEAA
                                                                                                                                                                                                        -GDTLPSTTATSLYASFSSPISPPSPLTPKYGSFISRDSSLTGINEFASSFGTSNIDSVL
                                                                                                                                                                                                                                                                                                                         SLDTSKPRASGILKRPQTLALPDVAGGNGPETSRRNVTFSQQVANILLNGVKYESELTG
                                                                                                                                                                                                                                                                                                                                                                                                                   GATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGGASSEDS
                                                                                17 QLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD
                                                                                                                   HWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDP---RPLELALLILGYGLLD
                                                                                                                                                       FCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPAIDWDTSALAPYLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                       LMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEARVVPGR
                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
15-WAR-2004 (Rel. 43, Last annotation update)
Sucrose transport protein (Sucrose permease) (Sucrose-proton
                                            Length 751;
                                                               Indels
                  POTENTIAL.
5C33E1C2E4A1B2EC CRC64;
                                            15.6%; Score 446; DB 1; 22.3%; Pred. No. 4.1e-25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         525 AA
                                                               79; Mismatches
POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                LGPTEP --- AEGLSAPSLSPHCCP.
                  730 P
81751 MW;
                                                                                                                                                                                                                                                                                                      -----PR------
                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
630
688
710
751 AA;
                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TR----
                                                       Local Simi
tes 160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 5
SUT_SPIOL
ID SUT_SPIOL
AC Q03411;
TRANSMEM
TRANSMEM
TRANSMEM
SEQUENCE
                                                                                                  98
                                                                                                                    77
                                                                                                                                                                                           194
                                                                                                                                                                                                                               223
                                                                                                                                                                                                                                                  323
                                                                                                                                                                                                                                                                                                                         442
                                                                                                                                                                                                                                                                                                                                                             502
                                                                                                                                                                                                                                                                                                                                                                               307
                                                                                                                                                                                                                                                                                                                                                                                                                                                      427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          487
                                                                                                                                                                                                                                                                    244
                                                                                                                                                                                                                                                                                                        258
                                                                                                                                                                                                                                                                                                                                           260
                                                                                                                                                                                                                                                                                                                                                                                                                   367
                                              Query Match
                                                       Best Loca
Matches
FT
                                                                                                                    ઠે
                                                                                                                                     g
                                                                                                                                                       à
                                                                                                                                                                         d
                                                                                                                                                                                           ð
                                                                                                                                                                                                           g
                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                 쉽
                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AXX OOC ODE THE
                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----WDTSALAPYLGTQEECLFGLLT-LIFLTCVAATLLVAEBAALGPTEPAEGLSAPSL 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFG--TRAVY 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEVYGGT-----VGEGKLYDQGVHAGALGLMINSVVLGVMSLSIEGLARMVGGAKRLWG 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLA--GLLCPDP-----RPLELALLIL 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VPPFTKTAAACDVYCANLKSCFFISITLLIVIJILALSVVKERQITIDEIQEEEDLKNRNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SPHCCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVABLCSWMALMTFTLFYTDFVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LLTFGLEVCLAAGITY ------VPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35 LKKLGLVASVAAGVQPGWALQLSLLTPYVQLLGIPHTWAAYIWLCGPISGMIVQPLVGYY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps.
                                                                                                                                                                                                                              PATHWAY: Sucrose metabolism. SUBCELLULAR LOCATION: Integral membrane protein. SIMILARITY: Belongs to the glycoside-pentoside-hexuronide (GPH) cation symporter transporter (TC 2.A.2) family.
                                                                                                                                           FUNCTION: Responsible for the transport of sucrose into the cell, with the concomitant export of a proton (symport system) Can also transport maltose at a lesser rate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GVGLLDFCGQVCFTPLEALLSDLFR-DPDHCRQAYSVYAFMISLGGCLGYLLPAID-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 525;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Transport; Sugar transport; Symport.

1 37 CYTOPLASNIC (POTENTIAL).

72 92 2 (POTENTIAL).

64 127 3 (POTENTIAL).

65 165 4 (POTENTIAL).

84 204 5 (POTENTIAL).

85 165 6 (POTENTIAL).

86 204 6 (POTENTIAL).

87 204 6 (POTENTIAL).

88 8 (POTENTIAL).

89 8 (POTENTIAL).

80 9 (POTENTIAL).

81 10 (POTENTIAL).

82 442 10 (POTENTIAL).

85 508 11 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPLASMIC (POTENTIAL).
018347A4D2CC1CC6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; Score 324.5; DB 1;
; Pred. No. 2.1e-16;
91; Mismatches 196;
                        Klesmeier J.W., Willmitzer L., Frommer W.B., "Isolation and characterization of a sucrose spinach by functional expression in yeast.", EMBO J. 11:4705-4713(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PIR; S28052; S28052.
InterPro; IPR005828; Sub transporter.
InterPro; IPR005899; Suc/H.symport.
Pfam; PF00083; Sugar tr; 1.
TIGRFAMs; TIGR01301; GPH_sucrose; 1.
MEDLINE=93099843; PubMed=1464305;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       54992 MW:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X67125; CAA47604.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 23.2 (9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       525 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sest Local Sim:
Matches 129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                             475
                                                                                             429
LASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYR 415
                                                                                                                             506
                                                                                                                                              -----HFRDSHHIM---- 405
                                                              416 GDTGGASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVG
                                                                                             -----GSAVPPPPPA--GVKGGALAIFAVLG
                                                                                                                             -------------------AP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Identification and characterization of novel genes located at the t(1,15) (p36.2,q24) translocation breakpoint in the neuroblastoma cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-20195630; PubMed=10729226;
Amler L.C., Bauer A., Corvi R., Dihlmann S., Praml C., Cavenee W.K.,
Schwab M., Hampton G.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           similarity).
SUBCELIOLAR LOCATION: Integral membrane protein (Potential).
SUBCELIOLAR LOCATION: Integral membrane protein (Potential).
TISSUE SPECITY: Expressed in adult heart, brain, muscle and kidney, with very strong expression in brain. Also expressed in fetal brain, kidney and lung.
SIMILARITY: Belongs to the glycoside-pentoside-hexuronide (GPH) cation symporter transporter (TC 2.A.2) family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genomics 64:195-202(2000).
-!- FUNCTION: Mediates glucose uptake along the pH gradient (By
                                                                                                                                                                                                                                                                                                                                  15-MAR-2004 (Rel. 43, Created)
15-MAR-2004 (Rel. 43, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Proton-associated sugar transporter A (PAGT-A) (Deleted in neuroblastoma 5 protein) (DND-S) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 509;
                                                                                                                           EPTEARV-VP------GRGICLDLAILDSAFLLSQV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EEE766819D267C4C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -.
e; Transport; Sugar transport; Symport.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                       509 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9.3%; Score 267;
                    POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF118274; AAD27583.1; ALT_INIT. Genew; HGNC:17939; DNBS.
                                                                                                                                                                                          507 SLFMGSIVQLSQSVTAY 523
                                                                                                                                                                                                                         490 AFVVGAVAATASAVLSF 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54637 MW;
                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               354
381
408
466
489
                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             509 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ransmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      605763;
                                                                                                                                                                                                                                                                                                       HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NON TER
TRANSMEM
 356
                            376
                                                                                                                           476
                                                                                             406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              line NGP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEN
                                                                                                                                                                                                                                                                       RESULT 6
PAST_HUMAN
                                                                                        Db
                                                                                                                                                   qq
                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                     à
                      d
                                                             ò
                                                                                                                           ò
                                                                                                                                                                                                                    g
```

```
RA Wood V. Gwilliam R., Rajandream M.A., Lyne M., Lyne R., Stewart A.,
RA Wood V., Gwilliam R., Rajandream M.A., Lyne M., Lyne R., Stewart A.,
RA Gouros J., Peat N., Hayles J., Baker S., Basham D., Bowman S.,
RA Groks K., Brown D., Brown S., Chillingworth T., Churcher C.M.,
A Collins M., Connor R., Cronin A., Davis P., Fidalgo J., Hodgson G.,
RA Gentles S., Goble A., Hamlin N., Harris D., Hidalgo J., Hodgson G.,
RA Holroyd S., Hornsby T., Howarth S., Huckle B.J., Hunt S., Jagels K.,
James K., Jones M., Leather S., McDomald S., Jagels K.,
RA Mooney P., Moule S., Munghy L., Niblet D., Odell C.,
RA Noney P., Moule S., Munghy L., Niblet D., Odell C.,
RA Skelton J., Simmonds M., Squares R., Squares S.,
Ratton J., Simmonds M., Squares R., Squares S.,
RA Skelton J., Volkart G., Tivey A., Walsh S.V., Warren T., Whitehead S.,
RA Weltjens I., Vanstreels B., Rieger M., Schaefer M., Mueller-Auer S.,
RA Gabel C., Fuchs M., Fritzc C., Holzer E., Moestl D., Hilbert H.,
RA Eger P., Zimmermann W., Wedler H., Wambutt R., Purnelle B.,
RA Goffeau A., Cadieu E., Dreano S., Gloux S., Lelaure V., Mottier S.,
RA Bager P., Zimmermann W., Gaillardin C., Moore K., Hurst S.M.,
RA Bager P., Zimmermann W., Gaillardin C., Moore K., Hurst S.M.,
RA Bager P., Almer C., Jümenez J., Sanchez M., Garzon A., Thode G.,
RA Daga R.R., Cruzado L., Jümenez J., Sanchez M., del Rey F., Benito J.,
RA Daga R.R., Cruzado L., Moreno S., Ammirrong J., Forsburg S.L.,
RA Daga R.R., Cruzado L., Mimenez M., Derschiff T., Derschif
                                                   4
                                                                                                                             RLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGLYQGVPRAEPGTEARRHYD 318
                                                                                                                                                                                                                                                                                                                                                 | | | | : : : : | : : : | : | : | | SGVTMGCWGMCIYAFSAAFYSAILEKLEBFLSVRTLYFIAYLAFGLGTGLATLSRNLYVV 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                             379 TASAALIGFIFSALQILPYTLASLYHREKOVFLPKYRGDIGGASSEDSLMISFLPGPKPG 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    139 APFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEARVVPGRGICLDLAILDSA 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----RGMGVDISLLSCQ 444
                                                                                                                                                                            319 EGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVAAFPVAAGATCLSHSVAVV
                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      392 ISLCITYGILFSTLCTLPYSLLCDYYQSK-----KFAG-----SSADGTR----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=968 h90;
MEDLINE=20223868; PubMed=10759889;
Ding D.-Q., Tomita Y., Yamamoto A., Chikashige Y., Haraguchi T.,
                                                   78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dominguez A., Revuelta J.L., Moreno S., Armstrong J., Forsburg
Cerrutti L., Lowe T., McCombie W.R., Paulsen I., Potashkin J.,
Shpakovski G.V., Ussery D., Barrell B.G., Nurse P.;
"The genome sequence of Schizosaccharomyces pombe.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        499 FLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQVVF 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                445 YFLAQILVSLVLGP-----LTSAVGSANGVMYFSSLVSF 478
Pred. No. 3.2e-12;
o. Mismatches 93; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20.14051, 20.0006, 2.1ANUJAKD, FRI; 533 AA.
28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 43, Last annotation update)
60-60-61 alpha-glucoside permease.
50T1 OR SPAC2F3.08
50T1 OR SPAC2F3.08
50T1 OR SPACEF3.08
50T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             553 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=21848401; PubMed=11859360;
                                                   42;
            25.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 35-166 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nature 415:871-880(2002).
                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Schizosaccharomyces.
    Best Local Similarity
Matches 72; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=4896;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SCHPO
                                                                                                                                                                                                                                                                                                                                                                               332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUT1 SCHPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                               쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

us-09-593-793a-113.rsp

```
g
                    ò
                                          g
                                                              ò
                                                                                     g
                                                                                                              ð
                                                                                                                             d
                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97 NSRIGRRPFWLCASILGTFSLFLM---GW-----APDICLFIFSNEVLMKRVTIVLATI 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96
      "Large-scale screening of intracellular protein localization in living fission yeast cells by the use of a GPP-fusion genomic DNA library."; Genes Cells 5:169-190(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASDHW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPD------PRPLELALLIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPAID-WDTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                       MEDIJINE-21065106; PubMed=11136464;
Reinders A., Ward J.M.;
"Functional characterization of the alpha-glucoside transporter Sut:
from Schizosaccharomyces pombe, the first fungal homologue of plant
                                                                                                   sucrose transporters.";
Mol. Microbiol. 39:445-454(2001).
-!- FUNCTION: Responsible for the transport of maltose and sucrose into the cell, with the concomitant export of a proton (Symport
                                                                                                                                                   -!- PÄTHWAY: Maltose and sucrose metabolism.
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: Belongs to the glycoside-pentoside-hexuronide (GPH) cation symporter transporter (TC 2.A.2) family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8.2%; Score 235.5; DB 1; Length 553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                   POTENTIAL.
EXTRACELLULAR (POTENTIAL).
POTENTIAL.
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL.
EXTRACELLULAR (POTENTIAL)
POTENTIAL.
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2C31DFC2D88A7C7A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL.
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                ar transport; Symport.
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24.0%; Pred. No. 6.8e-10;
:ive 59; Mismatches 153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL
                                                                                                                                                                                                                                                                                                                             Transmembrane, Transport, Sugar tre
DOMAIN
TRANSMEM 34 54 POTENT
DOMAIN 54 72 EXTRA
TRANSMEM 73 93 CYTOPI
ODNAIN 94 111 CYTOPI
TRANSMEM 112 132 POTENT
DOMAIN 133 140 EXTRA
TRANSMEM 141 161 POTENT
DOMAIN 162 186 CYTOPI
                                                                                                                                                                                                                                                                                                 EMBL; AB027797; BAA87101.1; -. PIR; T38541; T38541.
GeneDB_SPombe; SPAC2F3.08; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61744 MW;
                                                                                                                                                                                                                                                                                        EMBL; Z99165; CAB16264.1; -.
                                                IDENTIFICATION, AND FUNCTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ouery Match
Best Local Similarity 24...
Best Sign Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        54
72
72
72
72
72
72
72
72
73
73
74
33
34
33
34
33
34
33
34
33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          453
474
495
516
522
543
553 AA;
                                                                                                                                                                                                                                                                                                                                                     34
733
733
1112
1141
1162
2008
217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   238
281
302
323
444
425
                                                                                                                                            system)
                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRANSMEM
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Baloinformatics and the BMED outstation the buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                      SIYLLDVAVNVVMASTRSLIVDSVRS-DQQHEANSWAGRMIGVGNVLGYLLGYLPLYRIF 207
                                                              187 ALAPYLGTQEECLFGLLTLIFLIFUTCVAATLLVAEEAALGPTEPAEGLSAPSLSPHCCPCRA 246
                                                                                                                                                247 RLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGLYQGVPR 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis sp. strain PCC6803. II. Sequence determination of the entire genome and assignment of potential protein-coding regions."; DNA Res. 3:109-136(1996).

-i. SUBCELLULAR LOCATION: Integral membrane protein (Potential).

-i. SIMILARITY: BELONGS TO THE SODIUM:GALACTOSIDE SYMPORTER FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

Wandel-18905231;

Rancko I., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Y.,

Miyajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T.,

Miyajima N., Mirosuno A., Muraki A., Nakazaki N., Naruo K., Okumura Shimpo S., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasuda M.,

Tabata S.;
                                                                                        : : | | : :: | | : :: | SPLNFTQLQVFCVLASISLV-LIVTITTIFVSER-RFPPVEHEKSVAG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL, D90912; BAA18257.1; -.
PIR; S75696; S75696.
InterPro: IPR001927; Nad-Cal_symport.
IIGREAMS, TIGROP32; gph, 1.
PROSITE; PS00872; Na GALACTOSIDE SYMP; FALSE_NEG.
Hypothetical protein; Transport; Transmembrane; Symport;
                                                                                                                                                                                                                                  307 AEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQ 347
                                                                                                                                                                                                                                                           GH-----EEDWDMATRQGSFALLLFAIISLAANTALPLLLE 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Synechocystis sp. (strain PCC 6803).
Bacteria; Cyanobacteria; Chroococcales; Synechocystis.
NCBI_TaxID=1148;
                                                                                                                                                                                                                                                                                                                                                                                            15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Hypothetical symporter sll1374.
                                                                                                                                                                                                                                                                                                                                                                                544 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51
104
1136
1136
2211
2211
2211
2333
334
4403
521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Complete proteome. TRANSMEM 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31
852
852
844
852
844
853
854
850
                                                                                                                                                                                                                                                                                                                                    RESULT 8
YD74 SYN3
ID 74 SYN3
AC P74168;
DT 15-DEC-1998 (1)
DT 15-DEC-1998 (1)
DT 16-OCT-2001 (1)
                                                                                                                                                                                                                                                                          309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (SGE)
                        149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                        208
                                                                                                                                                                                        254
```

```
606145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genew;
MIM; 60
THE HELL LAND BEAR AND BEAR AN
                                                                                                                                                                                                                                                                                   124 ILILGYGLLDFCGQVCFT----PLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLP 179
                                                                                                                                                                                                                                                                                                                                                                                            176 YI----LIAAGLPDRPQQQFGELGVMISVLSISALLWSALRLQEKGKEP---1LSPSL- 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----RRRLAPLLMAAGITLILLAIAKSFNLLGGSGFDYISFFLILLGLIWGGFGFTLR 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                281 DSAVEEHLQKLENSPSPGVTENLPLLKQL--KIAFSNRAFLFVIGIYLCSWLAVQLTASI 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      292 YTDFVGEGLYQCVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGT 351
                                                                                                                                                                                                                                                        64 GLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPLELA 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      339 LVYFVVS--WMGLNEQOSGT------IALAVQ-GTALVMLFVWQALAQFLDK 381
                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fossey S.C., Mihic S.J., Craddock A.L., Mychaleckyj J.C., Dawson P.A., Bowden D.W.;
                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AIDWDTSALAPYLGTQEECLFGLL-TLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---LPRLHQLCCRMPRTLRR-LFV--AELCSWMALMTFTLF
                                                                                                                                                    16 AQLILVNLLTFGLEVCLAAG-----ITYVPPLLLEV-GVEEKFMTMVLGIGPVL
                                                                                                                                                                                                     2 SÓSLSAEKLHFITKLAYGAGDFGPAITANILVFYLLFFLTDVAGIPAALAGSVLMIGKIF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GT10 HUMAN STANDARD; PRT; 541 AA.
095528; OPH16;
28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
10-0CT-2003 (Rel. 42, Last annotation update)
50-lute carrier family 2, facilitated glucose transporter, member 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "GLUTIO: a novel glucose transporter in the type 2 diabetes linked region of chromosome 20q12-13.1.";
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo. NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE=Liver;

MEDLINE=2114553; PubMed=11247674;

MCV4e-Wylie A J., Lamson D.R., Chen Y.T.;

Molecular cloning of a novel member of the GLUT family of transporters, SLC2A10 (GLUT10), localized on chromosome 20q13.1: candidate gene for NIDDM susceptibility.";
                                             5.0%; Score 142; DB 1; Length 544;
22.3%; Pred. No. 0.0045;
tive 60; Mismatches 179; Indels 126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RAVY-LASVAAFPVAAGAICLS-HSVAVVIASAALIGFIFSALQILPYIL 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     382 KVIYFLGSMVWMGAEAGLWLVQPGQVALLYTLAIFAGVGVSVAYLIPWSM 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hashim Y., Huckle E.J., Deloukas P.;
2000) to the EMBL/GenBank/DDBJ databases.
C91D0EDFF32277EE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              239 PHCCPCRARLA----------FRNLGAL-----
60064 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Glucose transporter type 10)
SLC2A10 OR GLUT10.
                          Query Match
Best Local Similarity 22.3%
....hes 105; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Stavrides G.S., Hashi
Submitted (JAN-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human)
  544 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     257
                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               227
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTIO HUMAN

ID GTIO HUMAN

ID GTIO HUMAN

28-FEB.

DT 28-FEB.

DT 28-FEB.

DT 10-CTI-

DE SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

SOLUCE

MARTHER

RA MCYDIEIN

RA MCYDIEIN

RA MCYDIEIN

RA MCYDIEIN

RA MCYDIEN

RA MCYDIEN

RA MCYDIEN

RA MCYDIEN

RA MCYDIEN

RA SOWGEN

                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                          ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
```

```
AND STATES OF THE STATES OF TH
```

Plasmid RP1. Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales; Enterobacteriaceae; Escherichia.

Allmeier H., Cresnar B., Greck M., Schmitt R., "Complete nucleotide sequence of Tn1721: gene organization and novel gene product with features of a chemotaxis protein."; Gene 111:11-20(1992).

TRANSPOSON=Tn1721;
MEDLINE=92192465; PubMed=1312499;

SEQUENCE FROM N.A

a

```
309 LSVSGIGLVSFAVPMDSGPSCL--AVPNATGQTGLPGDSGLLQDSSLPPIPRT-----N 360
                                                                                                                                                                                                                                                                                                                           132
                                                                                                                                                                                                                                                                                                                                                                                              167
                                                                                                                                                                                                                                                                                                                                                                                                                    243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     213 -RPRYSFLDLFRARDNMRG---RITVGLGLVLFQQLTGQPNVLCYA--STIFSSVGFHGG 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA--- 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EKOVFLPKYRGDIGGASSEDSIMISFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASA 465
                                                                                                                                                                                                                                                                                                                                                                       133 DECGOVCETPLEALLSDLFRDPDHCRQAYSVYAFMISLG----GCLGYLLPAIDWDTS-- 186
                                                                                                                                                                                                                                                                                                                                                                                                                                           FGWATAP-----AVLOSISILFIP--AGT---DETATHKDLIFLQGGEAPKLGPG--- 212
                                                                                                                                                                                                                                                                              72
                                                                                                                                                                                                                                                                                                  69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ------FTFSALQILPYTLASLYHR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----REPILSTAKKTKPHPRSGDPSAPPRLALSSALPGPP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDVSVRVVVGEPTEARVVPGRG----ICLDLAILDSAF------LLSQVAP--
                                                                                                                                                                                                                                                                                          70 DC-----YGRKQAILGS-NLVLLAGSLTIGLAG------SLAWLVLGRAVV
                                                                                                                                                                                                                                                                                                                                                                                     CRARLA FRNIGALL PRIHOL CCRMPRTLRRL FVABLCSWMALMTFTLFYTDFVGBGLYQG
                                                                                                                                                                                                                                                                            16 AQLILIVNLLIFGLEVCLAAGITYVPPLLLEVG---VEEKFMTMVLGIGPVLGLVCVPLLG
                                                                                                                                                                                                                                                                                                                          SASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPLELALLILGVGLL
                                                                                                                                                                                                                                                                                                                                                                                                                   ---ALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPHCCP
                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----SLFMG----SLVQLSQSVTAYMVSAA-GLGLVAIY 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              443 IRGRAFAFCNSFNWAANLFISLSFLDLIGTIGLSWFFLLYGLTAVLGLGFIYLF 496
                                                                                                                        10 (POTENTIAL).
CYTOPLASNIC (POTENTIAL).
11 (POTENTIAL).
12 (POTENTIAL).
12 (POTENTIAL).
CYTOPLASNIC (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
                                                                                                                                                                                                                              Query Match
4.8%; Score 136; DB 1; Length 541;
Best Local Similarity 21.9%; Pred. No. 0.012;
Matches 130; Conservative 72; Mismatches 210; Indels 182;
                               CYTOPLASHIC (POTENTIAL).
CYTOPLASHIC (POTENTIAL).
7 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
CYTOPLASHIC (POTENTIAL).
9 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
              5 (POTENTIAL) .
EXTRACELULAR (POTENTIAL)
  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 10
TCR1 ECOLI
TCR2 ECOLI
AC P029E2;
DT 21-UTL-1986 (Rel. 01, Created)
DT -OCT-1996 (Rel. 34, Last sequence update)
DT 28-FEBS-2003 (Rel. 41, Last annotation update)
DT Tetracycline resistance protein, class A (TETA(A)).
                                                                                                                                                                                                  334 N
56911 MW;
  DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                  TRANSMEM
DOMAIN
TRANSMEM
                                                                                                                                                                                    DOMAIN
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       466
                                                                                                                                                                                                                                                                                                    12
                                                                                                                                                                                                                                                                                                                           73
                                                                                                                                                                                                                                                                                                                                                                                               109
                                                                                                                                                                                                                                                                                                                                                                                                                     187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   507
  셤
                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                     \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                            ò
```

WEDLINE=92388137; FubMed=1517220; Allard J.D., Bertrand K.P.; "Membrane topology of the pBs322 tetracycline resistance protein. TetA-PhoA gene fusions and implications for the mechanism of TetA

SEQUENCE FROM N.A.
PLASMID-REL! TRANSPOSON=TN1721;
MEDLINE-83299270; PubMed=6310527;
Waters S.H., Rogowsky P., Grinsted J., Altenbuchner J., Schmitt I waters S.H., regowesky P., Grinsted J., Altenbuchner J., Schmitt In The tetracycline resistence determinants of RP1 and Tn1721: nucleotide sequence analysis.";
Nucleic Acids Res. 11:6089-6105(1983).

Fletcher J.N., Hart C.A., Batt R.M., Saunders J.R.; Submitted (MAR-1994) to the EMBL/GenBank/DDBJ databases.

SEQUENCE OF 85-399 FROM N.A. STRAIN=DH1;

```
membrane insertion."

J. Balo. Chem. 267:17899-17819 (1992).

J. SIMILARIY: BELONGS TO THE MANDOR PACINITATOR FAMILY (ALSO KNOWN AS THE DRUG RESISTANCE TRANSLOCASE FAMILY).

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBLO AUGUSTAN COMMENCED TRANSLOCASE FAMILY).

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBLO AUGUSTAN COMMENCED TRANSLOCASE FAMILY).

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBLO AUGUSTAN COMMENCED TRANSLOCASE FAMILY).

This SWISS-PROT entry is copyright. It is produced through a collaboration of the Burd of The Swiss Institute of Bioinformatics and the EMBLO AUGUSTAN COMMENCED TRANSLOCASE TRANSLOCASE FAMILY).

EMBL. KAIJSO, CAA45643.1;

EMBL. KAIJSO, CAA45643.1;

PRINTS, A03509, TYPECRI.

PIRS A03509, TYPECRI.

FIRS A03509, TYPECRI.

InterPro; IPRO04734; Drug_resist.

InterPro; IPRO04835; Sug_transporter.

InterPro; IPRO04890; 2.A. Ol. 02; 1.

PROSTIE; PSS0809 MFS: 1.

PROSTIE; PSS0809 MFS: 1.

PROMAIN

INTERPANSMEN THANSMEN BELO. PROBABLE.

PRANSMEN A TRANSMEN BELO. PROBABLE.

PRANSMEN A GE FROBABLE.

PRANSMEN A GE FROBABLE.
```

, ,

```
NCBI_TaxID=132472;
                                                SEQUENCE FROM N.A.
                                                                                                                                                ENVIRONMENT
                                                                                                                                                                                                                                                                                                                                        ransport
                                                                                                                                                                                                                                                                                                                                               DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                              DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                       FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                      FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                              NOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
 -----GITGATGAVA----GAYIADITDGDERARH----FGFM---SA 138
                                                                                                                                                                                                                                                                                                                                                                               154
                                                                                                                                                                                                                                                                                                                                                                                              282
                                                                                                                                                                                                                                                                                                                                                                                                             --GGFSPH-APFFAAALNGINFLTGCFLLPESHK---GERRPLRREALNPLASFRWARG 208
                                                                                                                                                                                                                                                                                                                                                                                                                              334
                                                                                                                                                                                                                                                                                                                                                                                                                                                             335 SLVFSLVMDRLVQRFGTRAVYLASVA---AFPVAAGAT--CLSHSVAVVTASAALTGFTF 389
                                                                                                                                                                                                                                                                                               ---RPFIWALSLGILLSLFLIPRAGWLAGL 112
                                                                                                                                                                                                                                                                                                                              113 LCPDPRPLELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGG 172
                                                                                                                                                                                                                                                                                                                                                                                                                                            209 MTVVAALMAVFFIMQLVGQ----VPAALWVIFGEDRFHWDATTIGISLAAFGILHSLAQ 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71
                                                                                                                                                                                                                                                                               63
                                                                                                                                                                                                                                                                                                                                                             173 CLGYLLPAIDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGL
                                                                                                                                                                                                                                                                                                                                                                        233 SAPSLSPHCCPCRARLAFRNLG----ALLPRLHQLCCRMPRTLRRLFVAELCS--W---
                                                                                                                                                                                                                                                                                                                                                                                                                             ---MALMIPTLFYIDFVGEGLYQGVPRA--EPGTEARRHYDE---GVRMGSLGLFLQCAI
                                                                                                                                                                                                                                                             19 LLVNLLTFGLEVCLAAGITYVPPL---LLEVGVEEKFMT----MVLGIGPVLGLVCVPLL
                                                                                                                                                                                                                                                                              LIVILSTVALD --- AVGIGLIMPVLPGLLRDLVHSNDVTAHYGILLALYALMQFACAPVL
                                                                                                                                                                                                                                                                                                              GALSD----RFGRRPVLLVSLAGAAVDYAIMATAPFLWVLYIGRIVA-----
                                                                                                                                                                                                                                               Indels 169;
                                                                                                                                                                                                                              4.4%; Score 125.5; DB 1; Length 399; 22.3%; Pred. No. 0.052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SALQILPYTLASLYHREKQVFLPKYRGDTGGASSEDSLMTSFLPGP 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       318 PALQAM---LSRQVDEERQ------GQLQGSLAALTSLTSIV-GP
                                                                                                                                                                                                              298427E6B5478374 CRC64;
                                                                                                                                                                     R -> I (IN REF. 3).
M -> V (IN REF. 3).
V -> I (IN REF. 3).
A -> T (IN REF. 3).
ASF -> SFV (IN REF. 3).
                                               PERIPLASMIC (PROBABLE).
                                                                               PLASMIC (PROBABLE).
                                                                                                                                                               (PROBABLE).
                               CYTOPLASMIC (PROBABLE).
CYTOPLASMIC (PROBABLE)
            PERIPLASMIC (PROBABLE)
PROBABLE
                                                                                              CYTOPLASMIC (PROBABLE)
                                                                                                               PERIPLASMIC (PROBABLE)
PROBABLE.
                                                                                                                               CYTOPLASMIC (PROBABLE)
                                                                CYTOPLASMIC (PROBABLE)
                                                                                                                                               PERIPLASMIC (PROBABLE)
                                                                                                                                                                                                                                              136;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-NOV-1995 (Rel. 32, Created) 01-NOV-1995 (Rel. 32, Last sequence update) 01-NOV-1995 (Rel. 32, Last annotation update) Purcmycin resistance protein pur8.
                                                                                                                                                                                                                                              57; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     503 AA
                                                                                                                                                               CYTOPLASMIC
                                                                                                                                                        PROBABLE
                                                                        PROBABLE
                                                                                      PROBABLE
                                                                                                                                       PROBABLE
                                                                                                                                                                                                              42240 MW;
                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
GSASDHWRGRYGRR
                                                                                                                                                                                                             399 AA;
                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                       Local Simi
nes 104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FUR8 STRLP
P42670;
                      TRANSMEM
DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
                                                                                              DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                            CONFLICT
CONFLICT
SEQUENCE
DOMAIN
TRANSMEM
                                                                               DOMAIN
TRANSMEM
                                                                                                                               DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             390
                                                                                                                                                                     CONFLICT
                                                                                                                                                                                                                                                                                              72
                                                                       TRANSMEM
                                                                                                                                                        FRANSMEM
                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                              107
                                                                                                                       FRANSMEM
              DOMAIN
                                                              DOMAIN
                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                       Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PUR8_STRLP
임
                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                            임
                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the ENEL cutstation-the European Bioinformatics. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                       puromycin.",

Bur. J. Biochem. 218:963-971(1993).

Fur. J. Biochem. 218:963-971(1993).

-!- FUNCTION: MAY BE INVOLVED IN ACTIVE PUROMYCIN EFFLUX ENERGIZED BY

-!- FUNCTION: MAY BE INVOLVED IN ACTIVE GRADIENT. IN ADDITION, IT COULD

BE IMPLICATED IN SECRETING N-ACETYLPUROMYCIN, THE LAST

INTERWEDIATE OF THE PUROMYCIN BIOSYNTHESIS PATHWAY, TO THE
                                                                                                                                                                                                   STRAIN=ATCC 12461;
MEDLINE=94109397; Pubmed=7916693;
Tercero J.A., Lacalle R.A., Jimenez A.;
"The pur8 gene from the pur cluster of Streptomyces alboniger encodes a highly hydrophobic polypeptide which confers resistance to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: Integral membrane protein.
SIMILARITY: BELONGS TO THE MAJOR FACILITATOR FAMILY (ALSO KNOWN
AS THE DRUG RESISTANCE TRANSLOCASE FAMILY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TIGREAMS; TIGRO0711; efflux_EmrB; 1.
PROSITE; PSS0850; MFS; 1.
Antibiotic resistance; Antibiotic biosynthesis; Transmembrane;
Streptomyces lipmanii (Streptomyces alboniger).
Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Streptomycineae; Streptomycetaceae; Streptomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL.
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CYTOPLASMIC (POTENTIAL).
FA3B814DF9A3EB74 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL.
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL, X76855, CAA54186.1; -.
InterPro; IPR004638; Efflux_EmrB.
InterPro; IPR007114; MFS.
InterPro; IPR005828; Sub_transporter.
InterPro; IPR001411; TCR_TetB.
Pfam; PF00083; sugar_tr; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRINTS; PR01036; TCRTETB.
TIGRFAMS; TIGR00711; efflux EmrB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               444
462
483
503 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
DOMAIN
SEQUENCE
```

51852 MW;

금

```
32;
                                                                                                                                                                                                                                                                                                                                                                                         410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LGSASDHWRGR----YGRRRPFIWALSLGILLSLFLIPRAGW-LAGLL---CPDPRPLEL 122
                                                                                                                                                              LG-----GRGLASALGRRRIF---AVGIL-----GFGLASLLGGAAPDPGTLFL 119
                                                                                                                                                                                             ALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPAID 182
                                                                                                                                                                                                                                                             183 WDTSALAPYLGTQEECLFGLLT--LIFLTCVAATLLVAEBAALGPTEPAEGLSAPSLSPH 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LPKYRGDIGGASSEDSLMISFLPGPKP----GAPFPNGHVGAGGSGLL----PPPPALC 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LPLGLGIAVGSS---LIAARLLPRTRPRTLIVGALL----AAAAGMALLTRLEPDTP--- 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GASACDVSVRVVVGEPTEARVVPGRGI-CLDLAILDSAFLLSQVAP-----SLFMGSIV 514
                                                                                             79
                                                                                                                                                                                                                120 ARALQGV----FAAALAPAAL-ALINTLFTEPGERGKARGVYGGVSGGAAVGLLAG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=94049112; PubMed=8231804;
Lindquist S., Weston-Hafer K., Schmidt H., Pul C., Korfmann G.,
Lindquist S., Martin H.H., Normark S.;
"AmpG, a signal transducer in chromosomal beta-lactamase induction.";
Mol. Microbiol. 9:703-715(1993).
SEQUENCE FROM N.A.
                                                                                    241 CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAEL--CSWMALMTFTLFYTDFVGE
                                                                                                                                                                                                                                                                                                                                                 -- PPLLLEVGVEEKFMTMV----LGIGPVLGLVCVPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                         357 ASVAAFPVAAGATCLSHSVAVVTASAALTG----FTFSALQILPYT--LASLYHREKQVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         272 PGVVAHRVRGGS-----FLVVGLPQIGLFGLFLFLTYYLQGILDYSPVLTGV----AF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=SN0301-1, SN0301-3, and SN0301-5, MEDLINE=95291453; PubMed=7773494; Schmidt H., Korffmann G., Barth H., Martin H.H., if Korffmann G., Barth H., Martin H.H., cignal transducer encoded by ampG is essential for induction of chromosomal AmpC beta-lactamase in Escherichia coli by beta-lactam
                                  Gaps
                                                                                                                                                                                                                                                                                        ------dilteyidwrwciynapyalld-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AmpG protein.

Mayed OR B0433 OR Z0536 OR ECS0487.

Bscherichia coli, and
Escherichia coli 0157.H7.

Bacteria, Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Escherichia.
                                  Indels 197;
 Length 503;
Score 121.5; DB 1;
Pred. No. 0.13;
61; Mismatches 175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QLSQSVTAYMVSAAGLGLVAIYFA 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OVEGALGVALLNTVSTGATAAYLA 443
                                                                 26 FGLEVCLAAGITYV-----
                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       [1]
SEQUENCE FROM N.A.
                                  131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ECOLI
                                                                                                                                                              80
                                                                                                                                                                                             123
                                                                                                                                                                                                                                                                                                                                                                                           299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AMPG ECO
P36670;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 12
                                                                                                                               ò
                                                                                                                                                           g
                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                           \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \delta
                                                                                                                                                                                           8
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=0157:H7 / RIMD 0509952,
MEDLINE=21156231, PubMed=11258796;
Hayashi T., Makino K., Ohnishi M., Kurokawa K., Ishii K., Yokoyama K.,
Han C.-G., Ohtsubo E., Nakayama K., Muzata T., Tanaka M., Tobe T.,
Iida T., Takami H., Honda T., Sasakawa C., Ogasawara N., Yasunaga T.,
Kuhara S., Shiba T., Hattori M., Shinagawa H.;
"Complete genome sequence of enterohemorrhagic Escherichia coli
0157:H7 and genomic comparison with a laboratory strain K-12.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA Res. 8:11-22(2001).
-!- FUNCATION: Probably acts as a permease in the beta-lactamase induction system and in peptidoglycan recycling.
-!- SUBCELLULAR LOCATION: Integral membrane protein. Inner membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=O157:H7 (EDL933 / ATCC 700927; MAD B. Glasner J.D., Perna N.T., Plunkett G. III, Burland V. Mau B., Glasner J.D., Perna N.T., Plunkett G. III, Burland V. Mau B., Glasner J.D., Rose D.J., Mayhew G.P., Evans P.S., Gregor J., Kirkpatrick H.A., Posfai G., Hackett J., Klink S., Boutin A., Shao Y., Miller L., Grotbeck E.J., Davis N.W., Lim A., Dimalanta E.T., Potamousis K., Apodaca J., Anantharaman T.S., Lin J., Yen G., Schwartz D.C., Mahch R.A., Blastner F.R.; Lin J., Yen G., Schwartz D.C., "Genome sequence of enterchaemorrhagic Escherichia coli O157:H7."; Nature 409:529-533(2001).
                                                                                       SEQUENCE FROM N.A.
STRAIN=K12 / MG1655,
BIDLINE=97426617, PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V. Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                               жо.
                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
Roberts D., Allen E., Araujo R., Aparicio A., Chung E., Davis Duncan M., Federspiel N., Hyman R., Kalman S., Komp C., Kurdi Lew H., Lin D., Namath A., Oefner P., Schramm S., Davis R.W., Submitted (JAN-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Probable).
-!- SIMILARITY: TO H.INFLUENZAE H10350 AND TO YEAST YBR220C.
                                                                                                                                                                                                                                                                                                               "The complete genome sequence of Escherichia coli K-12."; Science 277:1453-1474(1997).
antibiotics and 'unspecific' inducers.";
Microbiology 141:1085-1092(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                       Riley M., Colladd
Gregor J., Davis
Mau B., Shao Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Probable)
   THE STANTANT OF THE STANTANT O
```

```
Escherichia coli
     30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :| | | | : | : | | | : | : | | | | : | : | | | : | : | : | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               111 GLLCPDPRPLELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDH-CRQAYSVYAF--- 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : | : | | | : | | | D-------TIP-------VPKTLEQAVVAPLRDFFGRN 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   223 NAWLILLLIVLYKLGDAFAMSLTTTFLIRGV----GFDAG---EVGVVNKTLGLLATIV 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     L-----SALSAVGRVYVG-PVAGWFVEAHGW-----STFYLFSVAAAVPGLIL 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          511 GSIVQLSQ-----SVTAYMVS-----AAGLGLVAIYFATQVVFDKSDLAKYS 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : : : | | | | : | : | | | | 399 LLVCRQTLEYTRVNDNFISRTAYPAGYAFAMWTLAAGVSLLAVWLLL-LTWDALDLTHFS 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                280 CSWWALMTFTL-----FYTDFVGEGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCA 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        334 ISLVFSLVMDRLVQRFGTRAVYLASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQ 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     275 GALYGGILMORLSL---FRALLIFGI----------LOGASNAGYW 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                308 LLSITDKHLYSMGAAVFFENLCGGMGTSAFVALLMT-------LCNKSFSATQFAL 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RLIRHRKAQLILVNLLTPGLEVCLAAGITYVPPLLLEVGVEEKFMTM------VLGIGPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LGLVCV-------FLIGSASDHWRGRYGRRPFIWALSLGILLSL----FLIP--RAGWLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MISLGGCLGYLLPAIDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EPAEGLSAPSLSPHCCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAEL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     454 LPPPPALCGASACDVSVRVVVGEPTEARVVPGRGICLDLAILDSAFLLSQVA---PSLFM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ILPYTLASLYHREKQVFLPKYRGDTGGASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4.2%; Score 119.5; DB 1; Length 491;
21.0%; Pred. No. 0.18;
tive 76; Mismatches 193; Indels 205;
                                                                                                                                                                                                                                                                                                                                  G -> D (IN NON-INDUCIBLE MUTANT SN0301-3).
                                                                                                                                                                                                                                                                                     G -> D (IN NON-INDUCIBLE MUTANT SN0301-1).
                                                                                                                                                                                                                                                                                                                                                                                                   -- D (IN NON-INDUCIBLE MUTANT
     Inner membrane; Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                            SN0301-5).
6B0D7E2BC699CA9C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YHJE ECOLI STANDARD; PRT; 440 AA. 19743; 1621 STANDARD; PRT; 440 AA. 01-0727-1994 (Rel. 30, Created) 10-077-1994 (Rel. 30, Last sequence update) 28-FBB-2003 (Rel. 41, Last annotation update) Hypothetical metabolite transport protein yhjE. 4HZ OR B3523.
                         POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                   POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                        POTENTIAL.
                                                                                                                                                                                                                                                                  POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        53245 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                              268
                                                                                                                                                                                                                                                                                                                                                                                                   373
                                                                                                                                                                                                                                                                                                                                                                                                                                                  491 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                             268
                                 13
81
110
224
226
226
3328
3328
425
151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Simi
hes 126;
                                                                                                    TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    167
                            TRANSMEM
                                                                                                                                                                                                                                                               TRANSMEM
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       357
                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                              FRANSMEM
                                                                                                                                                                                                                                        TRANSMEN
                                                                                                                                                                                                                                                                                                                                             VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                   VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KK
FITTE FITTE FITTE SO SET THE FITTE SET THE FI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its mee by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                 STRAIN=KI2 / MG1655,
MEDLINE=94316500; PubMed=8041620;
Sofia H.J., Burland V., Daniels D.L., Plunkett G. III, Blattner F.R.;
"Analysis of the Escherichia coli genome. V. DNA sequence of the
region from 76.0 to 81.5 minutes.";
Nucleic Acids Res. 22:2576-2586(1994).
-: SUBCELLULAR LOCATION: Integral membrane protein. Inner membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Escherichia.
                                                                                                                                                                                                                                                     (Pocential):
-!-SIMILARITY: BELONGS TO THE SUGAR TRANSPORTER FAMILY. STRONG,
H.INFLUBNZAE HI0281 AND HI0418.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS00216; SUGAR TRANSPORT 1; 1.
PROSITE; PS00217; SUGAR TRANSPORT 2; FALSE NEG.
Hypothetical protein; Transport; Transmembrane; Inner membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.1%; Score 117; DB 1; Length 440; 28.4%; Pred. No. 0.24; ive 29; Mismatches 54; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3A23302A9DCBE5BE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11 (POTENTIAL)
PERIPLASMIC (P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PERIPLASMIC (F
10 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (POTENTIAL)
PERIPLASMIC (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S (POTENTIAL)
PERIPLASMIC (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PERIPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL, U00039, AAB18499.1; -...
EMBL, AE000429, AAC76548.1; -...
PIN. 347743, S47743, S47743.
ECGGENE, EG12249; YhjE.
INTERPTO: IPR004736; Cit. H. symport.
INTERPTO: IPR007134; MFS.
INTERPTO: IPR005828; Sub_transporter.
INTERPTO: IPR005829; Sug_transporter.
Pfam; PF00083; Sugar Lr; I.
TIGREAMS; TIGRO0883; ZA0106; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            47208 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 28.49
Matches 48; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PS50850; MFS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     385
406
411
432
440 AA;
                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Complete proteome.
                                          NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE;
PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'RANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
```

> à g

```
RESULT 15
g
                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                  \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformeatics and the EMBL outstation the buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
            112 LLCPDPRP-LELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISL 170
                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=LT2 / SGSC1412 / ATCC 700720;
MEDLINE=21534948; PubMed=11677609;
McClelland M., Sanderson K.E., Spieth J., Clifton S.W., Latreille P., Courtney L., Porwollik S., Ali J., Dante M., Du F., Hou S., Layman D., Leonard S., Nguyen C., Scott K., Holmes A., Grewal N., Mulvaney B., Ryan E., Sun H., Florea L., Miller W., Stoneking T., Nhan M., Waterston R., Wilson R.K.;
"Complete genome sequence of Salmonella enterica serovar Typhimurium LT2.";
                          ---SGNPILVFAFLLLGLSLMG----LTFGPMGALLPELF--PTEVR--YTGASFSYNV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nature 413:852-856(2001).
-!- SUBCELLULAR LOCATION: Integral membrane protein. Inner membrane (Potential).
-!- SIMILARITY: BELONGS TO THE MAJOR FACILITATOR FAMILY (ALSO KNOWN AS THE DRUG RESISTANCE TRANSLOCASE FAMILY).
                                                                                                                                                              01-0CT-1994 (Rel. 30, Created)
28-FSB-2003 (Rel. 41, Last sequence update)
28-FSB-2003 (Rel. 41, Last annotation update)
Methyl viologen resistance protein smvA.
SMVA OR STM1574.
Salmonellat typhimurium.
Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                                                                                                                             STRAIN=SL1303;
MEDLINES-55011654; PubMed=7926834;
MEDLINES-55011654; PubMed=7926834;
HORGO E., Morimyo M., Mita K., Machida I., Hama-Inaba H., Tsuji HIChimura S., Noda Y.;
Ichimura S., Noda Y.;
"The methyl viologen-resistance-encoding gene smvA of Salmonella
                                                                       390 ASILG------ASVAPYIAAMIQTNYGLGAVGLYLAAMAGLTILA 428
                                                        171 GGCLGYLLPAIDWDTSALAPYLGTQEECLFGLLTL-IFLTCVAATLLVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protecme.
                                                                                                                                           Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; D26057; BAA05055.1; EMBL; AE008769; AAL20492.1; StyGene; SG10384; smvA InterPro; IRR007114; MFG. InterPro; IRR001411; TCR TetB. PRINTS; PRO1036; TCRTETB. PROSITE; PS50850; MFS; 1.
                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                     Gene 148:173-174(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=602;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fransmembrane;
                                                                                                                                                                                                                                                                                                                                                           typhimurium."
                                                                                                                                          SMVA_SALTY
P37594;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
TRANSMEM
TRANSMEM
                                   342
                                 g
                                                         à
```

```
210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               269
                                                                                                                                                                                                                                                                                                                                                                                    364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----GEAVQLANSLPPTQGQAILDAARHAFIWSHSVA 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 191 OPLNIGHAVMIIIAILLIVYSAKTALKGHLSLÄVISFTLLTGALLIGLFIRTQLATSRPM 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LCPDPRPLELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMI---- 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          307 ASGFSGPIAĠVLVSRLGLRLVATCĠMALSĀLSFYGLAMTDF-STQQWQAWGLMALLGFS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----SLGGCL------GYLLPAIDWDTSALAPYLGTQEECLFGLLTLIFLTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 211 VAATLLVAEEAALGPTEPAE-GLSAPSLSPHCCPCRARLAFRNLGALLPRLHQLCCRMPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         270 TLRRIFVABLCSWMALMTFTLFYTDFVGEG--LYQGVP--RAEPGTEARRH----YDEGVR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----IWALSL----GILLSLFLIPRAGWLAGL
                                                                                                                                                                                                                                                                                                                                                            ----EVCLAAGITYVPPLLLEVGV-----EEKFMT
                                                                                                                                                                                                                                                                                                                                                                                                                                      MVLGI------GPVLG------GPVLG-----LGSASDHWRGRYGRR-
                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=98295987; PubMed=9634230; Cole S.T., Churcher C., Harris Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C., Harris S.V., Biglmeier K., Gas S., Bary C.E. III, Tekaia F., Badcock K., Basham D., Erown D., Chillingworth T., Connor R., Davies R., Devlin K., Feltwell T., Gentles S., Hamlin N., Holroyd S
                                                                                                                                                                                                                                                                                 4.1%; Score 117; DB 1; Length 495; larity 21.0%; Pred. No. 0.27; Conservative 60; Mismatches 151; Indels 136;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria, Actinobacteria, Actinobacteridae, Actinomycetales, Corymebacterineae, Mycobacteriaceae, Mycobacterium.
NCBI_TaxID=1773;
              POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
A - N (IN REF. 1).
A - V (IN REF. 1).
Y - V (IN REF. 1).
F - Y (IN REF. 1).
L - Y (IN REF. 1).
L - Y (IN REF. 1).
L - Y (IN REF. 1).
AILD -> GRYLT (IN REF. 1).
M; 961F77C748CDA164 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y051 MYCTU STANDARD; PRT; 640 AA. 010880; 053628; Casted)
15-DC7-1996 (Rel. 37, Last sequence update)
16-DC7-2003 (Rel. 42, Last annotation update)
170-CC7-2003 (Rel. 42, Last annotation update)
180-CF1-2003 (Rel. 42, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MGSLG-LFLQCAISLVFSL 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LSSAGSMLLLLAVGMWFSL 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           424 GLEAQEIARASSSM------
                                                                                                                                                                                                                                               52134 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                              17 OLLLVNLLTFGL----
  280
3319
3347
4411
1444
1147
1198
447
457
                                                                                                                                                                                                                                               495 AA;
                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RPF---
2260
22990
332990
1114491
4447
4447
4547
4547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=H37Rv;
                                                                                                                                                                                                                                                                                         Mar
Local Sim
                                                                                                                                                                                                                                                                                                                                                                                                    72
                                                                                                                                                                                                                                                                                                                                                                                                                                        25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      323
                                                                                                                              CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        169
                  TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                             CONFLICT
```

```
Search con
Job time
                                                                                                                                                                g
                                                                                                                                                                                                à
                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                       셤
                                                                           à
                                                                                                                                   ò
                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65 LVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLF------LIPRAGWLAGL 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              204 HPEAPSPVSALMSAAWVNLGIYGIVGIVELQL-----LGPGPRWWGLA----L 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113 LCPDPRP----LELALLIIGV-GILDFCGQVCFTPLEALLSDIFRDPDHCRQAYSVYAFM 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                                  -i- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-i- SIMILARITY: TO POLYPEPTIDE 5 OF THE NADH-UBIQUINOL OXIDOREDUCTASE OF CHLOROPLASTS OR MITOCHONDRIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16 AQLLLV----NLLTFGL--EVCLAAGITYV-----PPLLLEVGVEEXFMTMVLGIGPVLG
                                                                                                                                   STRAIN=CDC 1551 / Oshkosh,
MEDLINE=22206494; PubMed=12218036;
Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,
Fleischmann R.D., Alland D., Sien J.A., Carpenter L., White O.,
Feterson J., DeBoy R., Dodson R., Gwinn M., Haft D., Hickey E.,
Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M., Salzberg S.L.,
Delcher A., Utterback T., Weidman J., Khouri H., Gill J., Mikula A.,
Bishai W., Jacobs W.R. Jr., Venter J.C., Praser C.M.;
"Whole-genome comparison of Mycobacterium tuberculosis clinical and
Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L., Oliver S., Osborne J., Quail M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R., Sulston J.E., Taylor K., Whitehead S., Barrell B.G., "Deciphering the biology of Mycobacterium tuberculosis from the complete genome sequence.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels 155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 111.5; DB 1; Length 640; Pred. No. 0.89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6254C289DBD108A8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hypothetical protein; Oxidoreductase; Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22.3%; Pred. No. v.o.,
tive 73; Mismatches 222;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL
                                                                                                                                                                                                                                                                        Bacteriol. 184:5479-5490(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TIGR; MT0090; -.
Tuberculist; Rv0083; -.
InterPro; IPR001918; NADHub_oxred;
InterPro; IPR001750; Oxidored_q1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; ALO21428; CAA16264.1; -. EMBL; AE006920; AAK44315.1; -. PIR; D70850; D70850.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         65627 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00361; oxidored q1; 1
PRINTS; PR01437; NUOXDRDTASE4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3.9%;
                                                                                           Nature 393:537-544 (1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 22.3
Matches 129; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            laboratory strains."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         619
640 AA;
                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEN
   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ŕ
```

```
459 PLLVAPMVRRAAATLPAAQAVXFTGLGAV-----VRLPAMSG------SIAP 499
                                                                                                                                                                                                                                                                                                                                      277 AELCSWMALMTFTLFY------TDFVGEG-LYQGVPRAEPGTEARRHYDEGVR 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                400 VGVVALATGLSVAAMTKAFGIGFLARPRSTQAEAAREAPASMRAGMAIAAGA-CLVLAVA 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GPKPGAPFPNGHVGAGGSGLLP-----PPPPA-----LCGASACDVSVRVVVGEPTEAR 481
                                                      :::||
247 LAVGGTSALYGVLQASVAADLKRLLAYSTTEN----MGLITL----ALGAATLFADTGAYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ------TVFFGVAALGACGLPLGAGFVSEWLLVQSLIHAAPGHDPIVALTTPLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --VVTASAALTGFTFSALQILPYT-LASLYHREKQVFLPKYRGDTGGASSEDSLMTSFLP
ISLGG----CLGYLLPAIDWDTSALAPYLGTOEECLFGLLTLIFLTCVAATLLVAEEAALG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   323 MGSLGLFLQCAISLVFS-----LVMDRLVQRFGTRAVYLASVAAFPVAAGATCLSHSVA
                                                                                                                                                                       PTEPAEGLSAPSLSPHCCPCRARLAFRNLGALLPR-----LHOLCCRMPRTLRRLFV
                                                                                                                                                                                                                                                         300 PASIAAAAMLHMIAHA--AFKSLAFWAAGSVLAATGLRDLDLLGGLARRWPAT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  482 VVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSV 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --PLORVFGDVLRPDTDIEVTHTAESRYMAERITYRTAV 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              434
```

arch completed: August 25, 2004, 02:27:43 b time : 33.5196 secs

apium grave vicia faba vitis vinif

glycine max

plantago ma apium grave brassica ol

```
329.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
3328.5
328.5
328.5
328.5
328.5
328.5
328.5
328.5
328.5
328.5
328.5
328.5
344.5
3337.5
336.5
337.5
337.5
333.5
331.5
331.5
330
(without alignments)
1166.587 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                    US-09-593-793A-113
2861
1 MVQRIMVSRLLRHRKAQLLL......AIYFATQVVFDKSDLAKYSA 553
                                                                                                                                                                                                                        August 25, 2004, 02:22:38 ; Search time 149.566 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1017041
                              GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1017041 segs, 315518202 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                        Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Searched:
                                                                                                                                                                                                                            Run on:
```

lotus japon solanum tub pisum sativ oryza sativ oryza sativ lycopersico alonsoa mer arabidopsis arabidopsis arabidopsis oryza sativ nicotiana t euphorbia e

098725 0014077 0014077 0014077 001408

lycopersico solanum tub zea mays (m ricinus com

solanum tub brassica ol citrus sine

ALIGNMENTS

citrus sine

RESULT 1 Q96JT2

sp_archea:*
sp_bacteria:*
sp_bungi:*
sp_hungi:*
sp_nvertebrate:*
sp_mammal:*
sp_mammal:*
sp_organelle:*
sp_orga

SPTREMBL

••

Database

Last sequence update) Last annotation update) Created) 01-DEC-2001 (TrEMBLrel. 19, 01-DEC-2001 (TrEMBLrel. 19, 01-JUN-2003 (TrEMBLrel. 24, PRELIMINARY; Q96JT2

Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

SEQUENCE FROM N.A.
TISSUE-Prostate;
MEDLINE=21139094; PubMed=11245466;
Nu J., Kalos M., Stolk J.A., Zasloff E.J., Zhang X., Houghton R.L.,
Xu J., Kalos M., Stolk J. Badaro R., Reed S.G.;
"Identification and characterization of prostein, a novel prostatespecific protein."; Cancer Res. 61:1563-1568(2001).

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.

TISSUE-PERIODER ROWN N.A.

TISSUE-PERIODER ROWN N.A.

TISSUE-PERIODER N.A.

TISSUE-PERIODER N.A.

TISSUE-PERIODER N.A.

TISSUE-PERIODER N.A.

TISSUE-PERIODER N.A.

TAUBBERT R.D., Collins F.S., Wagner L.H., Derge J.G.,

Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

A Distchenko L., Marusina K., Parmer A.A., Rubin G.M., Hong L.,

A Distchenko L., Marusina K., Parmer A.B., Abramson R.D., Mullahy S.J.,

Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

Brownstein M.J., Wedin T.B., Toshiyuki S., Carninci P., Prange C.,

Brownstein M.J., McEwan P.J., McKerman K.J., Malak J.A., Schaetz T.B.,

Brownstein M.S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

A Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

A Willalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,

Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,

Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

096jt2 homo sapien 095ki5 macaca fasc 08kh7 macaca fasc 08k252 mus musculu 09vsv1 drosophila 08r110 mus musculu 08r204 mus musculu 09c204 mus musculu 09c204 mus musculu 09c204 crystas lat 08c9pl dictyosteli 065903 daucus caro 055803 daucus caro 059gk6 vitis vinif 09sgk6 vitis vinif 09sgk6 vitis vinif Description Q96JT2 Q95KI5 Q95KC5 Q95KC5 Q9VSV1 Q8R110 Q8C204 Q9C204 Q9C204 Q9C204 Q9C204 Q9FWB Q9FWB Q9FWB Q9FWB Q9FWB 21311212 DB Query Match Length 2861 2798 2502 2003 2003 2003 486 456 456 394.5 347.5 346.5 346.5

00000

```
Local Similarity 98.2
nes 542; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WVFDKSDLAKYS 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541 WFDKSDLAKYS 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q8K0H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 1008KOH7 1008KOH7 1000KOH7 1000K
        SERRERES
                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                        Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        D
                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                     60
Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S., Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E., Jones S.J., Marra M.A.; "Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ELALLILGYGLLDFCGQVCFTPLEALLSDFFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RVVPGRGICLDLAILDSAFLLSQVAPSLFWGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                              1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLBVGVBEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                   1 MVORLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                       PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IDWDTSALAPYLGTQEECLFGLITLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCPCRARLAFRNLGALLPRIHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCA1SLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ASSEDSIMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHRBKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .
0
                                                                                                                                                                                                                                                                                      Length 553;
                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                    Strausberg R.;
Submitted (APR-2003) to the EMBL/GenBank/DDBJ databases.
EMBL; AY033593; AAK54386.1; --
EMBL; BC0S0416; AAH50416.1; --
                                                                                                                                                                                                                                                553 AA; 59322 MW; 0AFA23FBC742A667 CRC64;
                                                                              and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                    100.0%; Score 2861; DB 4;
100.0%; Pred. No. 3.4e-210;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       553 AA
                                                                                                                                  SEQUENCE FROM N.A.
TISSUE=Peripheral Nervous System;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        553
                                                                                                                                                                                                                                                                                                      Best Local Similarity 100.
Matches 553; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VVFDKSDLAKYSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VVFDKSDLAKYSA
                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     095KIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                     g
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6 6 6 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원 상
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \overset{\circ}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 PVLGLVSVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 ELALLILGVGLIDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MVQRLMVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ĸ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MVQRLWVSRLLRHRKAQLLLINLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PVLGLVCVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301 YQGVPRAELGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IDWDTSALAPYLGTQEECLFGLLTLIFFLTCVAATLLVAEEAALGPAEPAEGLSAPSLPSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCPCWARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YOGVPRAEPGTEARRHYDEGVRMGSLGLFLOCAISLVFSLVMDRLVORFGTRAVYLASVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHRERQVFLPKYRGDAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421 ASSEDSIMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TSSEDSLMTSFLPGPKPGAPPPNGHVGAGGSGLLPPPPPALCGASACDVSVRVVVGEPTEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                        Terao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .
0
                                                                                                                                                                                                           CDNA
                                                                                                   Σ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 553;
                                                                                                        Hirai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                    the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                      "Isolation."
libraries.";
Submitted (ABR-2001) to the EMBL/....
Submitted (ABR-2001) to the EMBL/...
EMBL, AB060851; BAB46871.1; -..
Hypothetical protein.
Typothetical 553 AA; 59392 MW; 0718F3A91FB3BF1E CRC64;
Typothetical 553 AA; 59392 MW; 0718F3A91FB3BF1E CRC655 MW; 0718F3A91FB5A91FB
SEQUENCE FROM N.A.
TISSUE=Temporal cortex;
TISSUE=Tida M., Kusuda J., Tanuma R., Iseki K., I
Suzuki Y., Sugano S., Hashimoto K.;
"Isolation of full-length cDNA clones from macaque!"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q8KOH7,
01-OCT-2002 (TrEMBLrel. 22, Created)
01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Hypothetical protein (PROSTEIN homolog).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 2798; DB 6;
Pred. No. 2.2e-205;
2; Mismatches 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
```

4

us-09-593-793a-113.rspt

```
NCBI_TaxID=9541;
                                                                                                                                                                                                                                                Query Match
Best Local S:
Matches 489,
                                                                                                                                                                                                                                                                                                    53
                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                     173
                                                                                                                                                                                                                                                                                                                                                                                                                                                    233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       473
                                                                                                                                                                                                                                                                                                                                                    113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q8K252;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q8K252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 5
Q8K252
ID Q8K2:
 à
                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YQGVPRAEPGTEARRHYDEGIRMGSLGLFLQCAISLVFSLVMDRLVQKFGTRSVYLASVM 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IDWDISALAPYLGIQEECLFGLLILIFLICVAATLLVAEEAALGPTEPAEGLSAPSLSPH 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IDWDTSVLAPYLGTQEECLFGLTLIFLICMAATLFVTEEAVLGPPEPAEGLLVSAVSRR 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ASSEDSLMTSFLPGPKPGAPPPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEA 480
                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                 ō
                                                                                                                                                                                                                                                                                                                                                                                                     BLALLIGGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAFSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                       PVLGLVCVPLLGSASDHWRGRYGRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                        BLALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TFPVAAAATCLSHSVVVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SGEDSQTTSFLPGPKPGALFPNGHVGSGSSGILAPPPALCGASACDVSMRVVVGEPPEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RVVTCRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSHSVTAYMVSAAGLGLVAIYFATQ
                                                                                                                                                                                                                                                                                                                                      1 MVQRLWVSRLLRHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                              1 MIQRIWASRLIRHRKAQLILVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVABLCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCPCHVGLAFRNLGTLFPRLOOLCCRMPRTLRRLFVABLCSWMALMTFTLFYTDFVGEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361 AFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RVVPGRGICLDLAILDSAFILSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQ
                                             STRAIN-C57BL/6J; TISSUE-Urinary bladder;
MEDLINE-2254683; PubMed=12466851;
The FANTOM CONSORTIUM,
The RIKEN Genome Exploration Research Group Phase I & II Team;
The RIKEN Genome Exploration Research Group Phase I & II Team;
"Analysis of the mouse transcriptome based on functional annotation (60,770 full-1ength DNAs.";
NATURE 420:563-573 (2022)
BMBL; BC031381; AH31381.1; -.
EMBL; AK03488; BAC2963.1; -.
                                                                                                                                                         MGD; MGI:1922062; Prostein.
GO; GO:0016020; C:membrane; IEA.
GO; GO:001585; C:ubiquinol-cytochrome-c reductase complex; IEA.
GO; GO:0008121; F:ubiquinol-cytochrome-c reductase activity; IEA.
GO; GO:0006118; P:electron transport; IEA.
InterPro; IPRO05805; Rieske.
PROSITE; PS00200; RIESKE_2; 1.
                                                                                                                                                                                                                                                                                       553;
                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                Indels
           the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                            59742 MW; 6A474FEA630B4B13 CRC64;
                                                                                                                                                                                                                                                                                    90.9%; Score 2602; DB 11; 90.9%; Pred. No. 2e-190; tive 14; Mismatches 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ||||||:|||||||
VVFDKNDLAKYS 552
                                                                                                                                                                                                                                                                                                 Local Similarity 90.9
hes 502; Conservative
Strausberg R.;
Submitted (JUN-2002) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VVFDKSDLAKYS
                                                                                                                                                                                                                                                   l protein.
553 AA; 5
                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                       Query Match
g
                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

Š 501

Created)

(TrEMBLrel. 19,

PRELIMINARY;

Q95KC5 Q95KC5, 01-DEC-2001 (

AC

```
112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 TDFVGEGLYQGVPRAELGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVVDRLVQRFGTR 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LCPDPRPLELALLILGVGLIDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYTFMISIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 CLGYLLPAIDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATILVAEEAALGPAEPAEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301 AVYLASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHRERQVFLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VVGEPTEARVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SAPSLSPHCCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AVYLASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KYRGDTGGASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KYRGDAGGTSSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LCPDPRPLELALLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SAPSIPSHCCPCWARLAFRNIGALIPRIHQLCCRMPRITRRIFVAELCSWMALMIFTIFY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TDFVGEGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421 VVGEPTEARVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MIMVLGIGPVLGLVCVPLLGSASDHWRGRYGRRPFIWALSLGILLSLFLIPRAGWLAGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MTMVLGIGPVLGLVSVPLLGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLGYLLPAIDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                   M., Terao
                                                   Macaca fascicularis (Crab eating macaque) (Cynomolgus monkey).

Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Butheria; Primates; Catarrhini; Cercopithecidae;

Cercopithecinae; Macaca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
0
                                                                                                                                                                                                                         SEQUENCE FROM N.A.

TISSUE-Medulla oblongata;
Osada N., Hida M., Kusuda J., Tanuma R., Iseki K., Hirai M., 7
Suzuki Y., Sugano S., Haahimoto K.;
"Isolation of full-length cDNA clones from macaque brain cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Match 88.5%; Score 2531; DB 6; Length 501; Local Similarity 97.8%; Pred. No. 4.8e-185; les 489; Conservative 2; Mismatches 9; Indels (
                                                                                                                                                                                                                                                                                                                                                                                  the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                       libraries.";
Submitted (JUN-2001) to the EMBL/GenBank/DDBJ databases
EMBL, AB062977: BAB60745.1; -.
Hypothetical protein.
SEQUENCE 501 AA; 53447 MW; 8C554BBD04EE0470 CRC64;
01-OCT-2002 (TrEMBLrel. 22, Created)
01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
10-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Hypothetical protein (Fragment)
PROSTEIN OR 2210413P12RIK.
Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VAIYFATOVVFDKSDLAKYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VAIYFATQVVFDKSDLAKYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OCCUPATION
```

```
LSAPSLSP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Loca
Matches
ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            음
                                                                                                                                                                                                                                                          223
                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                343
                                                                                                                                                                                                                                                                                                                                                                                    403
                                                                                                                                                                                                                                                                                                                                                                                                      RIVOKFGTRSVYLASVMTFPVAAAATCLSHSVVVVTASAALTGFTFSALQIILPYTLASLY 300
                                                                                                                                                                                                                                                                                                                                                                                                                            463
                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   523
                                                                                                                                                                                                                                                                                                   GPTEPAEGLSAPSLSPHCCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWM 283
                                                                                                                                                                                                                                                                                                                                                             ALMTFTLFYTDFVGEGLYQGVPRAEPGTEARRHYDEGIRMGSLGLFLQCAISLVFSLVMD 240
                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                              PRAGWLAGLLYPDTRPLELALLILGVGLLDFCGQVCFTPLEALLSDLFRDFDHCRQAFSV
                                                                                                                                                                                                                                                                         YAFMISLGGCLGYLLPAIDWDTSVLAPYLGTQEECLFGLITLIFLIFLICMAATLFVTEEAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                       361 SACDVSMRVVVGEPPEARVVTGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSHSVTAY
                                                                                                                                                                                                                   104 PRAGWLAGLLCPDPRPLELALLILGVGLLDFCGQVCFTPLEALLSDLFRDFDHCRQAYSV
                                                                                                                                                                                                                                                          164 YAFMISLGGCLGYLLPAIDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEBAAL
                                                                                                                                                                                                                                                                                                                                          ALMTFTLFYTDFVGEGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMD
                                                                                                                                                                                                                                                                                                                                                                                    RLVQRFGTRAVYLASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLY
                                                                                                                                                                                                                                                                                                                                                                                                                            HREKOVFLPKYRGDTGGASSEDSLMTSFLPGPKPGAPPPNGHVGAGGSGLLPPPALCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SACDVSVRVVVGEPTEARVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAY
                                                                                                                                                                                               Gaps
                                                        MGD; MGI:1922082; Prostein.

GO; GO:0016020; C:membrane; IEA.

GO; GO:0045285; C:ubiquinol-cytochrome-c reductase complex; IEA.

GO; GO:0004121; F:ubiquinol-cytochrome-c reductase activity; IEA.

GO; GO:0006118; P:electron transport; IEA.

Interpro; IPR005805; Rieske.

PROSITE; PS00200; RIESKE_2; 1.
                                                                                                                                                                                             0;
                                                                                                                                                                       ; Score 2099; DB 11; Length 450; Pred. No. 4.1e-152; 12; Mismatches 33; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila melanogaster (Fruit fly).
Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neopiera, Endopterrygota, Diptera, Brachycera, Muscomorpha,
Ephydroidea, Drosophilidae, Drosophila.
                                       to the EMBL/GenBank/DDBJ databases
                                                                                                                                                      450 AA; 48261 MW; 72C703AEC131302C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   599 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421 MVSAAGLGLVAIYFATQVVFDKNDLAKYS 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MVSAAGLGLVAIYFATQVVFDKSDLAKYS 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                         73.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-JUN-2000 (TrEMBLrel. 14,
                                                EMBL; BC034084; AAH34084.1;
                                                                                                                                                                                               404; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                               Strausberg R.;
Submitted (JUL-2002)
                                                                                                                                Hypothetical protein.
                                                                                                                                                                                    Similarity
                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
 NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CG4484 protein.
CG4484.
                                                                                                                                            NON TER
SEQUENCE
                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                   224
                                                                                                                                                                                                                                                                                                                                             284
                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                     344
                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                            404
                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   464
                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9VSV1
                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9VSV1
g
                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŝ
                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
```

STRAIN=Berkeley;
MEDLINE=20196006; PubMed=10731132;
Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,

```
Amanarides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutcon R.G., Wortman J.R., Yandell M.D., Zhang O., Chen L.X.
Brandon R.G., Mortman J.R., Yandell M.D., Zhang O., Chen L.X.
Brandon R.G., Mortman J.R., Helt G., Chiampe M., Pfeiffer B.D.,
RA Barles R.M., Basu A., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Barles R.M., Basu A., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Barles R.M., Basu A., Burler H.-J. Baycaktaroglu L., Beasley E.M.,
RA Berokova D., Bucchan M.R., Buuck J., Brokstein P., Bortter P.,
RA Burtis K.C., Busam D.A., Buller H., Cadeu B., Center A., Chandra I.,
RA Burtis K.C., Busam D.A., Buller H., Cadeu B., Center A., Chandra I.,
RA Burtis K.C., Busam D.A., Buller H., Cadeu B., Center A., Chandra I.,
RA Burtis K.C., Busam D.A., Buller H., Caden B., Dunkov B.C., Dunn P.,
RA Burtis K.C., Boup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn R.D.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn R.A.
A Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., RA Harris M.,
RA Posler C., Gabrielian A.E., Garg N.S., Galbart W.M., Glasser K.,
A Jalai M., Kalush F., Karpen G.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harrey D., Heiman T.J., Kennison J.A., Ketchum K.A.,
Hasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Merlulov G., Milshina N.V., Mobarry C., Morris J., Moshrei A.,
Mount S.M., Moy M., Murphy B., Murphy L., Murny D.M., Nelson D.L.,
RA Reinert K., Remington K.S., Sunders R.D., Scheller F., Shen H.,
Rand B.E., Spadling A.C., Stapleron M., Strong R., Sun E., Shen I.,
Rand S., Wenders T., Caveri J.S., Zhang S., Zhu X., Smith H.O.,
RA Zheng X.H., Zhong F.N., Rubin G.M., Weissenbach J.,
RA Zheng X.H., Zhong F.N., Rubin G.M., Weissenbach J.,
Rand S., Rander R., Randen G., Lander R., Rand S., Zhu X., Smith H.O.,
Rand J., Shandan G., Shandan J.,
Rand J., Shandan S., Shandan J.,
Rand J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SYQNGYSPAVEKQGKSQDLETQSDYDAPVSLKAYLKSIFI------MPYSMRMLA 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    394 LTNLFCWMGHVTYCLYFTDFVGEAVFHGDPTAAPNSEAALNYEAGVRFGCWGMAIYAFSC 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           106 AGWLAGLLC-----PDPRPLELA--LLILGVGLLDFCGQVCFTPLEALLSDLFRDPDHC 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      225 PKAMTMFALFACFGGTIGYALGGVDWETTHIGSFMGGNIPTVFTLVTILFAVCKLITVTT 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -------HCCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLF 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGSVAALVSGEATTGPSASDYKFAVILTILGMVILDFDADTCQTPARTYLLDMC-VPEEQ 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VABLCSWMALMTFTLFYTDFVGEGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAIS 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ch 18.2%; Score 519.5; DB 5; Length 599; al Similarity 23.7%; Pred. No. 2.3e-31; 150; Conservative 100; Mismatches 201; Indels 183; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        158 RQAYSVYAFMISLGGCLGYLLPAIDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----TEPAEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               285 FREIPLPLIEQDELLRPLSEQAIKKELKKKNNTIYYIQETTÖLELQMASDDPKRLEALQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GSISDRCKLRWGRRRPIISILSFGIMCGLILVPYGKDLGLLLGDAGYTYAESALNFTSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66057 MW; C5381D334CFBF2EB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GSASDHWRGRYGRRPFIWALSLGILLSLFLIP------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----LVAEEAALGP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL, AEG035525, AAF60310.1. -
FlyBase, FBGH0035968; CG484.
SEQUENCE 599 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ે
```

ړ.

```
..
                                                   510
                                                                                                            452
                                                                                                                                                                                                                            509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEARVVPGRGICLDLAILDSAFLL 501
LVFSLVMDRLVQRFGTRAVYLASVAAFPV---AAGATCLSHSVAVVTASAALTGFTFSAL 392
                                                                                                                                                                                                                                                                             -----EIVPLKQARGLGTDVAIISSMVFIAQLIVSLS 564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   [1] SEQUENCE FROM N.A.
MEDLINE=22354683; PubMed=12466851;
The FANTOM Consortium,
the RIKEN Genome Exploration Research Group Phase I & II Team;
"Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs.";
Nature 420:563-573 (2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PNGHVGSGSSGILAPPPALCGASACDVSMRVVVGEPPEARVVTGRGICLDLAILDSAFLL
                                 SIYSLSVTKLMKWFGTKAVYISGMIYYGIGMLVLGLWPTKWGVLVFSTSA---GILYGTI
                                                                                                            QILPYTLASLYHREKQVFLPKYRGDTGGASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSG
                                                                                                                                                                   ---NG----
                                                                                                                                                                                                                            LLPPPPALCGASACDVSVRVVVGEPTEARVVP---GRGICLDLAILDSAFLLSQVAPSLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SQVAPSLFMGSIVQLSHSVTAYMVSAAGLGLVAIYFATQVVFDKNDLAKYS 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQVVFDKSDLAKYS 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 512; DB 11; Length 112;
Pred. No. 1.3e-31;
4; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B9D9DE79FEF09FB7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QRRIIO,
01-JUN-2002 (TYEMBLYEL 21, Created)
01-JUN-2002 (TYEMBLYEL 21, Last sequence update)
01-QT-2003 (TYEMBLYEL 25, Last annotation update)
Hypothetical protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAR-2003 (TrEMBLrel. 23, Created)
1-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-UTN-2003 (TrEMBLrel. 24, Last annotation update)
Membrane associated transporter protein.
                                                                                                                                                                                                                                                                                                                                      510 MGSIVQLSQSVTAYMVSAAGLGLVAIYFATQVVF 543
                                                                                                                                                                                                                                                                                                                                                                          : | : | : | : : | : : | : : | : : | : : | | : : : | | : : | : : | | : : : | | : : | | : : | | : : | | : : | | : : | | : : | | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | | : : | : | : : | | : : | : | : : | | : : : | | : : | : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | : | : : | : | : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | : 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        530
                                                                                                                                                                511 FTVPFILVARYH-AKNCFSIK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             112 AA; 11393 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17.9%;
91.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Strausberg R.;
Submitted (MAR-2002) to the
EMBL; BC024519; AAH24519.1;
Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match Local Similarity 91.9'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
TISSUE=Colon;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q8C204;
01-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ч
                                                                                                            393
                                                                                                                                                                                                                                                                                                                                                                                                  565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   502
                                                                                                                                                                                                                            453
                                                                                                                                                                                                                                                                                   533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q8R110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q8C204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QBR110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                   셤
                                                                                                         ò
                                                                                                                                                             g
                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
```

```
448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            506
                                                                                                                                                                                                                                                                                                                      133
                                                                                                                                                                                                                                                                                                                                                                          153
                                                                                                                                                                                                                                                                                                                                                                                                                             193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          283 MALMIFILFYIDFVGEGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVM 342
                                                                                                                                                                                                              92
                                                                                                                                                                                                                                                               93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         reduce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         389 KAMVSYIGLKGLYFMGYLLFGLGTGFIGLFPNVYSTLVLCSMFGVMSSTLYTVPFNLIAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ASACDVSVRVVVGEPTEARVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDPRP---LELALLILGVGLLD
                                                                                                                                                                                                                                                                                                                                                                                                                                FCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPAIDWDTSALAPYLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              154 FSADFIDGPIKAYLFDVCSHQDK-EKGLHYHALFTGFGGALGYILGAIDWVHLDLGRLLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        269 GSIEKVKNGGADTEQPVQEWKNQKPSGQSQRTMSMKSLLRALVNMPSHYRCLCVSHLIGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DRLVQRFGTRAVYLASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YHREKQVFLPKYRGDTGGASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TQEECLFGLITLIFLICVAATLLVAEBAAL--GPTEP-----AEGLSAPSLSPHCCPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----LLPRLHQLCCRMPRTLRRLFVAELCSW
                                                                                                                                                                                                            QLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD
                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-DEC-2002 (TrEMBLrel. 2), Last annotation update)
Medicol (TremBlrel. 2), Last annotation update)
Membrane-associated transporrer protein B.
Oryzias latipes (Medaka fish) (Japanese ricefish).
Bikaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii, Neopterygii, Teleostei; Meoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Atherinomorpha;
Beloniformes; Adrianichthyidae; Oryzinae; Oryzias.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein,
                                                                                                                                                     101;
                                                                                                       Length
                                                                                                 Score 484.5; DB 11; Length
Pred. No. 9.3e-29;
4; Mismatches 229; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=21372467; PubMed=11479596; Fukamachi S., Shimada A., Shima A.; Fukamachi S., Shimada A., Shima A.; Fukations in the gene encoding B, a novel transporter melanin content in medka."; Mat. Genet. 28:381-385(2001). BMBL; AF332101; AAK77024.1; -SEQUENCE 576 AA; 63411 MW; 13A5C9828ABEE894 CRC64;
        BREEJ, ANCOLOGO,
MGD; MGI:2153040; Matp.
CARTIONICE 530 AA; 57935 MW; 426898973B7D6420 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           576 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALTCMVOL------AQILVGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       526
                                                                                                                                                        84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RARLAFRNLGA------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   523 YMVSAAGLGLVAIYFATQVV
                                                                                                    16.9%;
26.1%;
EMBL; AK089932; BAC41003.1;
                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=8090;
                                                                                                                                                     Matches 146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=HNI
                                                                                                                                                                                                                 17
                                                                                                                                                                                                                                                                                                                                                                                                                                134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            478
                                                                                                                                                                                                                                                                  34
                                                                                                                                                                                                                                                                                                                         17
                                                                                                                                                                                                                                                                                                                                                                             94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 403
                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q90Z74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
Q90274
RES
                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCOCCOS SELECTION OF THE SELECTION OF T
                                                                                                                                                                                                                 ò
```

145 133 204 193 263 -- EEAA 222

16

Gaps

243

501

426

```
GLATLSRNLYVVISLCTHYGILFSTLCTLPYSLLCDYYQSK-----KFAG-----SSADG 671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVAAFPVAA 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            127 LMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPTEARVVPGR 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -GDTLPSTTATSLYASFSSPISPSPLTPKYGSFISRDSSLTGINEFASSFGTSNIDSVL 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  382 IDCFTAGHDNYLALPSSVPRQAISVSFPRAPDGFYČQERGLERREGPLTLGLDGDVLRVG 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ------LHQLCC---RMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGLYQGVPR 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ol-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Similar to Arabidopsis thaliana (Mouse-ear cress), sucrose transporter
protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             487 GICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFATQVVF 543
                                                                                                                                                                             146 RCTSRFGRRPFILVLAIGALLGLSLLLN-GRDIGMALADTATNHKWGILLTVCGVVLMD
                                                                                                                                                                                                                                                                                                                                     FCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPAIDWDTSALAPYLG
                                                                                                                                                                                                                                                                                                                                                                                   205 FSADSADNPSHAYMMDVCGPVDQDR-GLNIHALMAGLGGGFGYVVGGIHWDKTSFGRALG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    562 APHASEAYQKYNSGVIMGCWGMCIYAFSAAFYSAILEKLEECLSVRTLYFIAYLLFGLGT
                                                                                                                                                                                                                                           77 HWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLLCPDP---RPLELALLILGVGLLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDTGGASSEDS
                                                                                                                                           17 OLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  442 SLDTSKPRASGILKRPQTLALPDVAGGNGPETSRRRNVTFSQQVANILLNGVKYBSELTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----LTSAVGSANGVMYFASLVSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=AK4;
MEDLINE-22092622; PubMed=12097910;
Gloeckner G., Bichinger L., Szafranski K., Pachebat J., Dear P.,
Lehmann R., Baumgart C., Parra G., April J.F., Guigo R., Kumpf K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----CRARLAFRNLGALL-----
                                         15.6%; Score 446; DB 11; Length 751; 22.3%; Pred. No. 1.2e-25; ive 79; Mismatches 206; Indels 272;
SC33E1C2E4A1B2EC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dictyostelium discoideum (Slime mold).
Eukaryota, Mycetozoa, Dictyosteliida, Dictyostelium.
NCBI_TaxID=44689;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    223 LGPTEP---AEGLSAPSLSPHCCP------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 754 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                       194 TQEECLFGLLTLIFLTCVAATLLVA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-JUN-2003 (TrEMBLrel. 24, Created) 01-JUN-2003 (TrEMBLrel. 24, Last seq 01-OCT-2003 (TrEMBLrel. 25, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GMGVDISLLSCOYFLAQILVSLVLGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TR-----
81751 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ------PR-----
                                                                                            Matches 160; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
751 AA;
                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                           Query Match
Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        675
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q869Pl;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0869P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0869P1
ID QI
                                                                                                                                              6
                                                                                                                                                                                         임
                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                               \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                     17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          510
                                                                                                                                                                     RRSRGRLILHSMVMFGREFCYAVEAAFVTPVLLSVGLPRSLYSLVWLISPILGFLLQPII 115
                                                                                                                                                                                                                                                PDPRPLELALLILGVGLLDFCGQVCFTPLEALLSDL--FRDPDHCRQAYSVYAFMISLGG 172
                                                                                                                                                                                                                                                                                                                                                                                                                211
                                                                                                                                                                                                                                                                                                                                                                                                                                                            219 ACGYLVGAMDWGHSVLGRLLGSEYQVIYFFSALTWGVFLIVHLFSIPEKPLAKVPSESSA 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----RARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFV 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         339 AKQPIKEDQKKMTFRS-----LMKAIFNMPNHYRFLCISHLLGWAAFLCNMLFFTDFM 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DIGGASSEDSLMISFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGE 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      477 PTEARVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIY 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSASDHWRGRYGRRPFIWALSLGIL----LSLFL------IPRAGWLAGLLC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GEGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYL 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GOIVYRGNPYAEHNSTAYITYERGVEVGCWGLCINAVSSALYSYVQRFLLPYIGLKGLYF 451
                                                                                                                    7.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : | |: : | | | | | | SALRILIGPHSNGYGALGERPRSFSALGEANSVTSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     452 MGYFVFGMGTSLIGLPPEVIATLILCSVFGVMSSTLYTIPFNLIAEYQREBEBGV-KLEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUB-Brain;
Shimokawa N., Okada J., Haglund K., Dikic I., Koibuchi N., Miura M.;
"Pest-A, an ene class proton-associated sugar transport facilitator in the central nervous system.";
Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases.
EMBL, AB07529; BAB97313.1;
GO; GO:0005351; F:sugar porter activity; IEA.
Sugar transport.
                                                                                                                    RHRKAQLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLL
                                                                                                                                                                                                                                                                                                                                                            ----AIVVVMFGVVLFDFAADFIDGPIKAYLFDVCSYODKE---RGLHYHALFTGLGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQVFLPKYRG
                                                                                                                                                                                                                                                                                                                                                                                                             CLGYLLPAIDWDTSALAPYLGTQEECLF-----GLLTLIFLTCV-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -AATLIVAEBA----ALG--PTEPAEGLSAPSLSPHCCPC----------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----DCAALTCMVQL-----
                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rattus norvegicus (Rat).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Rattus.
NCBI_TaxID=10116,
                                                                   95; Mismatches 198; Indels 164;
                         Length 576;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-2002 (TrEMBLrel. 22, Created)
01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Proton-associated sugar transporter A.
                    Score 456; DB 13;
Pred. No. 1.5e-26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          751 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                       15.9%;
24.0%;
                                                                     144; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ---AQIIVGAG
                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Œ
                    Query Match
Best Local Si
Matches 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                537
                                                                                                                    12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         417
                                                                                                                                                                                                                                                                  116
                                                                                                                                                                                                                                                                                                                115
                                                                                                                                                                                                                                                                                                                                                                 168
                                                                                                                                                                                                                                                                                                                                                                                                                173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q8K4S3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 10
087483
AC 08448
AC 08448
DT 01-0C
DT 01-0C
DT 01-0C
DT 01-0C
DE PAST
OC MARRIA
OC MARRIA
CO MARR
                                                                                                                                                        q
                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                  ВÞ
                                                                                                                                                                                                                                                                                                 \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                              ☆
                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D
D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

6-

```
RESULT 13
Q9FNR6
TD Q9FNR6
AC Q9FNR6;
DT 01-MAR-2001 (TrEMBLrel. 16, Created)
                                                                                                  from carrot.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              487
                                                                                                                                                                                                                                                                          SEQUENCE
   g
                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                   dd
                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                              dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \stackrel{>}{\sim}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                               13;
                                                                                                                                                                                                                                                                                                                             373
                                                                                                                                                                                                                                126
                                                                                                                                                                                                                                                                                    316
                                                                                                                                                                                                                                                                                                                                                                        422
                                                                                                                                                                                                                                                                                                                                                                                                                 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                             526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 418
                                                                                                                                                                                                                                                                                                         LGVGLLDFCGQVCFTPLEALLSDLFRDPDHCRQAYSVYAFMISLGGCLGYLLPAIDWDTS 186
                                                                                                                                                                                                                                                                                                                                                  187 ALAPYLGTQEECLFGLITLIFLTCVAATL-LVAEBAALGPTEPAEGLSAPSLSPHCCPCR 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGASSEDSIMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVSVRVVVGEPT 478
                                                                                                                                                                                                                     68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Daucus carota (Carrot).
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots, asterids,
Tunggal B., Cox E., Quail M.A., Platzer M., Rosenthal A., Noegel A.A.; "Sequence and analysis of chromosome 2 of Dictyostelium discoideum."; Nature 418:79-85(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----LNIGTLNIFVVVPQMVVSLGIGLILDLSKGNVVSLLT---GSVASFFA
                                                                                                                                                                                                                                                                                                                       HRKA----QLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCV
                                                                                                                                                                                                                                                                                                                                                                                                         306 RAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVAAFPVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  BARVVPGRGICLDLAILDSAFLLSQVAPSLFMGSIVQLSQSVTAYMVSAAGLGLVAIYFA
                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                             PLIGSASDHWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLL--CPDPRPLELALLI
                                                                                                                                                                                                                                                                                  PLVGVITDRSECRFGRRKPFILIGSVFISIGLVLISNAETFGSYFGDSEQKKSIAISIAI
                                                                                                                                                                                                                                                                                                                                                                       374 RMVPFMKTDTRALFTLSIMVLLFCVVMTLGFVTBEQYIRVNED-QSVENP-----
                                                                                                                                                                                                                                                                                                                                                                                             ARLAFRNLGALLPRLHOLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGEGLYQGVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 366 AGATCLSHSVAVVTAS-----AALTGFTFSALQILPYTLASLYHREKQVFLPKYRGDT
                                                                                                                                                                                              127;
                                                                                                                                                                            Length 754;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --LOCIFFALFYFVESKIGSLLLIASTGIPWAIVMILPFSIVGM----
                                                                                                                                                                                               Indels
                                                           Baumgart C.,
Submitted (MAR.2003) to the EMBL/GenBank/DDBJ databases.
EMBL; AC117072; AA052628.1; -.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0005115; F:transporter activity; IEA.
GO; GO:0006810; P:transport; IEA.
InterPro; IPR005828; Sub_transporter.
Pfam; PF00083; sugar_tr; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----SG-----
                                                                                                                                                                        / Match 13.8%; Score 394.5; DB 5; Local Similarity 23.5%; Pred. No. 1e-21; les 128; Conservative 90; Mismatches 200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          515 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07,
07,
24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-AUG-1998 (TrEMBLrel. 01-AUG-1998 (TrEMBLrel. 01-JUN-2003 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sucrose/H+ symporter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TLFCF 628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOVVF 543
                                           FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -GVEDNES
                                                                                                                                                                                                                     13
                                                                                                                                                                                                                                        197
                                                                                                                                                                                                                                                                                   257
                                                                                                                                                                                                                                                                                                         127
                                                                                                                                                                                                                                                              69
                                                                                                                                                                                                                                                                                                                                                                                                                 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    624
                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        065803
                                                                                                                                                                                     Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OCCUPATION
  8
                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                              \delta
                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                             à
```

```
94 HCQSSFGRRRPFIASGAGCVALSVILI---GFAADISYKAGDDMSKTLKPRAVTVFVIGF 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     299 GLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLAS 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         77 HWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGL-----LCPDPRPLELALLILGV 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PFALASIYSSGSGAGQGLSLGVLNLAIVVPQMIVSVLAGPFDSLFGGGNLPAFVVGAISA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PHOCPCRARLAFRNLGALLPRLHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----PSSGKIPV--FGBLLGALKDL----PRPMLLLLIVTCLNWIAWFPFILFDTDWMGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                359 VAAFPVAAGATCL-----SHSV-----AVVTASA----ALTGFTFSALQIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FVNFILAIGLVMTVVVSKVAQHQREHSANGQLLPPSAGVKAGALSLFSILGIPLSITYSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34 KLVLVAALAAGUQFGWALQLSLLTPYVQLLGIPHKWAAYIWLCGPISGWLVQPIVGYYSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAIDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PYTLASLYHREKQVFLPKYRGDTGGASSEDSLMTSFLPGPKPG-----APFPNGHVGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17 QLLLVNLLTPGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                         sink-specific sucrose/H+ symporters
campanulids; Apiales; Apiaceae; Apioideae; Scandiceae; Daucinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 10; Length 515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              130 GLLDFCGQVCFTPLEALLSDLFR-DPDHCRQAYSVYAFMISLGGCLGY---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
12.1%; Score 347.5; DB 10; Length
Best Local Similarity 25.9%; Pred. No. 2.6e-18;
Matches 131; Conservative 80; Mismatches 215; Indels
                                                                                                                                                                                                                                                                                                                                   (BY
                                                                                                                                                                                                                                                                                             Plant Physiol. 118:1473-1480(1998).

-! SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY EMBL; Y16768; CAA76369-1;

-: STB. 174340; T14340.

GO; GO:0019666; C:inner membrane; IEA.

GO; GO:0016212; C:integral to membrane; IEA.

GO; GO:0005215; F:sucrose transporter activity; IEA.

GO; GO:0005215; F:sucrose transport; IEA.

GO; GO:000510; P:sucrose transport; IEA.

GO; GO:000610; P:sucrose transport; IEA.

InterPro; IPRO05828; Sul_transporter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  515 AA; 54424 MW; 897B90657C9E243C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00083; sugar tr; 1.
TIGRFAMs; TIGR01301; GPH_sucrose; 1.
Transmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGSGLLP----PPPALCGASACDVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=cv. Namtaise; TISSUE=Root;
MEDLINE=29663785; PubMed=9847123;
Shakya R., Sturm A.;
"Characterization of source- and
```

238

263 298

210

395

426

366

17;

œ

```
-----PCRARLAFRNLGALLPRLHQLCCRMPRTLRR-----LFVAELCSWMALMTFT 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LFYTDFVGEGLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRF 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               410 FLPKYRGDTGGASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGLLPPPPALCGASACDVS 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            77 HWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGLL--CPDPRPLELALLILGVGLLDF 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LFDTDWMGREIYGGKP-----NEGONYNTGVRMGALGLMLNSVVLGITSVLMEKLCRKW 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGFVW----AVVKHMD--- 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       187 ALAPYLGTQEECL----FGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLSPHCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TSS----CNADCANLKSAFLLDIIF---IAITTYISITAA-----QELPLSSSRSTHIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                149 ANNVIQEPCRALLADL-TEKDHRRTRVANAYFSLFIAVGNVLGFATGSYSGWFRIFWFTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17 QLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RLLRVASVACGIQFGWALQLSLLTPYVQELGIPHAWSSIIWLCGPLSGLLVQPLVGHLSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGQVCFTPLEALLSDLFRDPDH--CRQAYSVYAFMISLGGCLGYLLPA----IDWDTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTRAVYLASVAAFPVAAGATCLSHSVAVVTASAALTGFTFSALQILPYTLASLYHREKQV
                                                                                                                                                                                                                                                                                                                         STRAIN=Shiraz, TISSUE=Fruit;
Davies C., Wolf T., Robinson S.P.;
"Three putative sucrose transporters are differentially expressed in
                                                                                                                                                                                                                        Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots, rosids;
                                                                                                                                                                                                                                                                                                                                                                          grapevine tissues...

Plant Sci. 147:93-100(1999).

-!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY SIMILARITY).

EMBL; AF021808; AAF08329.1; --
GG; GG: Ono18866; C: inner membrane; IEA.

GG; GG: Ono18515; F: sucrose transporter activity; IEA.

GG; GG: Ono18515; F: sucrose transporter activity; IEA.

GG; GG: Ono18516; P: sucrose transporter activity; IEA.

GG; GG: Ono18770; P: sucrose transport; IEA.

GG; GG: Ono18910; P: transport; IEA.

InterPro; IPR005828; Sub transporter.

InterPro; IPR005829; Suc/H_symport.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             197; Indels 133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 27.0%; Pred. No. 3e-18;
Matches 153; Conservative 83; Mismatches 197; Indels 133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                501 AA; 53938 MW; 4D0D4DE2EF2F4BA8 CRC64;
                                                                                                                            Created)
Last sequence update)
Last annotation update)
                                                                                               Ä.
487 AISGVLAIVLLPKPSKDAASKLSLS 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam, PF00083, sugar tr, 1.
TIGRFAMs, TIGR01301, GPH_sucrose; 1.
                                                                                                                                                                           Putative sucrose transporter.
                                                                                                              Q9SQK6;
01-MAY-2000 (TrEMBLrel. 13,
01-MAY-2000 (TrEMBLrel. 13,
01-JUN-2003 (TrEMBLrel. 24,
                                                                                               PRELIMINARY;
                                                                                                                                                                                                             Vitis vinifera (Grape).
                                                                                                                                                                                                                                                                                                                                                                     grapevine tissues.";
Plant Sci. 147:93-10
                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                       NCBI_TaxID=29760;
                                                                                                                                                                                                                                                        Vitaceae; Vitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pransmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                              RESULT 14
Q9SQK6
ID Q9SQK
                  셤
                                                                                                              엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HWRGRYGRRRPFIWALSLGILLSLFLIPRAGWLAGL-----LCPDPRPLELALLILGV 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94 HCQSSFGRRRPFIASGAGCVAISVILI---GPAADISYKAGDDMSKTLKPRAVTVFVIGF 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        299 GLYQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLAS 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       130 GLLDFCGQVCFTPLEALLSDLFR-DPDHCRQAYSVYAFMISLGGCLGY-----LL 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       359 VAAFPVAAGATCL----SHSV-----AVVTASA----ALTGFTFSALQIL 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    367 FVNFILAIGLVMTVVVSKVAQHQREHSANGQLLPPSAGVKÅGALSLFSILGIPLSITYSI 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93
                                                                              Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
campanulids; Apiales; Apiaceae; Apioideae; Scandiceae; Daucinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAIDWDTSALAPYLGTQEECLFGLLTLIFLTCVAATLLVAEEAALGPTEPAEGLSAPSLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PFS--KTHACDLYCANLKSCFIISIALLIIITVVALSVVRĖNS--GPPDDADABEP---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          239 PHCCPCRARLAFRNLGALLPRIHQLCCRMPRTLRRLFVAELCSWMALMTFTLFYTDFVGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QLLLVNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PYTLASLYHREKQVFLPKYRGDTGGASSEDSLMTSFLPGPKPG-----APFPNGHVGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                      Thesis (2000), Department of Department of Botany,
University of Basel, Basel, Switzerland.
-!- SUBCELLULAR LOCATION.
EMBL, AJ303199, CAC19689.1, --
GO: GO:0019866, C:inner membrane; IBA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 25.9%; Pred. No. 2.6e-18;
Matches 131; Conservative 80; Mismatches 215; Indels 79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ,6e-18;
.es 215; Indels
                                                                                                                                                                                                            Sturm A.;
Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   515 AA; 54425 MW; 9580978C726523DC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                   GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0008515; F:sucrose transporter activity; IEA.
GO; GO:0005215; F:transporter activity; IEA.
GO; GO:0015770; P:sucrose transport; IEA.
GO; GO:006810; P:transport; IEA.
InterPro; IPR05828; Sub_transporter.
   sequence update)
annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 449 GGSGLLP----PPPALCGASACDVS 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00083; sugar tr; 1.
TIGRFAMs; TIGR01301; GPH_sucrose; 1.
   Last
 01-MAR-2001 (TrEMBLrel, 16, 01-JUN-2003 (TrEMBLrel, 24,
                                   Sucrose/proton symporter
                                                                Daucus carota (Carrot)
                                                                                                                                                                           SEQUENCE FROM N.A.
STRAIN-cv. Nantaise;
                                                                                                                                                                                                                                                                           STRAIN=cv. Nantaise;
                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                         NCBI_TaxID=4039;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Transmembrane
                                                                                                                                                                                                                                                                                          Shakya R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
Pfam; PF0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          211
                                                                                                                                                                                                                                                                                                                                                                        888888
 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            du
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

22;

88

186 207

٠,

```
19;
                                                                                                                                                                         471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HWRGRYGRRRPFIWALSLGILLSLFLIPRA---GWLAG-LLCPDPRPLELALLILGVGLL 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              182 DWDTSALAPYLGTQEEC-LFGLTLIFLITCVAATLLVAEEAALGPTEPAEGLSAPSLSPH 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCPCRARLAFRNIGALLPRIHQLCCRMPRILRRIFVAELCSWMALMIFTLFYTDFVGEGL 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --PSSGKIPV--FGELLGALKDL----PRPMLLLLIVTCLNWIAWFPFILFDTDWMGREI 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YQGVPRAEPGTEARRHYDEGVRMGSLGLFLQCAISLVFSLVMDRLVQRFGTRAVYLASVA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DFCGQVCFTPLEALLSDLFR-DPDHCRQAYSVYAFMISLGGCLGY-----LLPAI 181
| | | | | | | : | | | : | | : | | | : | | | | : | | | | : | | | | : | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : 
                                                                                                         470 VRVVVGEP---TEARVVP-GRGICLDLAILDSAFLLSQVAPSLFMGSIVQL----SQSV 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE=Root;

Wu N., Diao F., Zhang L., Huang M.;

TISSUE=Root;

TUSUEDS transporter protein.";

Sucrose transporter protein.";

Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.

-!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY SIMILARITY).

REML, AB036758, BAA894881.;

GO; GO:0019866; C:inner membrane; IEA.

RO; GO:0010815; F:sucrose transporter activity; IEA.

RO; GO:0005215; F:sucrose transporter activity; IEA.

RO; GO:0005125; F:sucrose transporter activity; IEA.

RO; GO:0005215; F:sucrose transporter.

RO; GO:0005215; F:sucrose transporter.

RO; GO:0005215; F:sucrose transporter.

RO; GO:0005315; R:sucrose transporter.

RO; GO:0005315; R:sucrose transporter.

RO; GO:0005315; R:sucrose transporter.

RO; GO:000531; R:sucrose transporter.

RO; GO:000531; R:sucrose transporter.

RIGREMAS, TIGRO1301; GPH_sucrose; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Daucus carota (Carrot).
Eukaryota; Viridiplanetee, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
campanulids; Apiales; Apiaceae; Apioideae; Scandiceae; Daucinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34 KLVLVAAIAAGVQFGWALQLSLLTPYVQLLGIPHKWAAYIWLCGPISGMLVQPIVGYYSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    154 DVANNMIQGPCRALLADLCSGDTRRMRSANAFYSFFMAVGNILGYAAGSYNNLYKLFPFS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     214 --KTHACDLYCANLKSCFIISIALLIIITVVA--LSVVREKQWSP-DDADAADBP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17 OLLLYNLLTFGLEVCLAAGITYVPPLLLEVGVEEKFMTMVLGIGPVLGLVCVPLLGSASD
                                                                                                                                                   DB 10; Length 515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         515 AA; 54523 MW; 2B548D1D9DFF51AC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-WAY-2000 (TrEMBLrel. 13, Created)
01-WAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 12.1%; Score 346.5; DB 10; Best Local Similarity 27.2%; Pred. No. 3.1e-18; Matches 137; Conservative 76; Mismatches 215;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       515 AA
                                                                                                                                                                                                                                                     546
                                                                                                                                                                                                                                                                                                                     472 AVAAVAAFASGLVAILAIPRSSADKS 497
                                                                                                                                                                                                                                                     TAYMVSAAGLGLVAIYFATQVVFDKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sucrose transporter protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Daucus.
NCBL_TaxID=4039;
                                                                                                                                                                                                                                                     521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94
                                                                                                                                                                             412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                         387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9SLN7;
                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CNIS60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                             ò
                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
```

```
429 ALASIYSSGSGAGQGLSLGVLNLAIVVPQMIVSVLAGPFDSLFGGGNLPAFVVGAISAAI 488
316 YGGT--AGKG----KLYDQGVRAGSLGLLLNSVVLGLTSIAVEYLVRGVGGVKI-LWGVV 368
                                                                                                                                                398 TLASLYHREKOVFLPKYRGDTGGASSEDSLMTSFLPGPKPG-----APFPNGHVGAGG 450
                                                               361 AFPVAAGATCL-----SHSV-----AVVTASA----ALTGFTFSALQILPY 397
                                                                                                       369 NFILAIGLVMTVVVSKVAQHQREHSANGQLLPPSAGVKAGALSLFSILGIPLSITYSIPF
                                                                                                                                                                                                                                                                                                                                         Search completed: August 25, 2004, 02:31:18 Job time : 154.566 secs
                                                                                                                                                                                                                                      SGLLP----PPPALCGASACDVS 469
                                                                                                                                                                                                                                                                              SGVLAIVLLPKPSKDAASKLSLS 511
                                                                                                                                                                                                                                        451
                                                                                                                                                                                                                                                                                489
                                                            δ
                                                                                                   업
                                                                                                                                       \overset{\sim}{\circ}
                                                                                                                                                                                    d
                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                              셤
```

Tris Page Blank (USp10,